THE

physical therapy

REVIEW

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Possibilities and Limitations of Rehabilitation Procedures for Paralysis Agitans
— CHRYSTAL, HOFFNUNG, BARSKY, and ROY

The Role of the Physical Therapist in Bracing — BOTEK

The Role of Physical Therapy in the Rehabilitation of Burned Patients — HOLLAND

A Work Plan for the Thoracic Surgery Patient
— HARMONY

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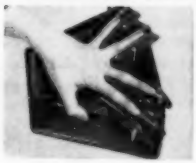

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Possibilities and Limitations of Rehabilitation Procedures for Paralysis Agitans

Murray Chrystal, M.A., Audrey Hoffnung, M.A., Murray Barsky, M.A., and Joy B. Roy, M.S.

With the growing recognition of Physical Medicine and Rehabilitation, there has been a change from the attitude, that aside from diagnosis, little or nothing can be done for those afflicted with a chronic neurological disease such as paralysis agitans. This change has not been due to any fundamental advances in the knowledge or treatment of this disease, but rather to the newer concept that the individual with a chronic disease such as paralysis agitans, can be helped both physically and mentally through the technics developed by Physical Medicine and Rehabilitation. These technics have resulted from the experience of those who have worked with this syndrome for many years. The goal of these technics is to teach the patient how to live best with his disability and how to employ his residual capacities to the fullest extent possible. In short, it is felt that while paralysis agitans is a progressive disease, there are means and methods of employing the patient's will and capacity so that he remains independent for as long a time as possible.

The neuromuscular symptoms of this disease fall into two main categories: a.) disturbances of motion, and b.) postural defects. The earliest disturbances of motion include tremor, slowness of movement, and weakness of the musculature, particularly the intrinsic muscles of the hands. As the disease progresses, other disabilities of motion appear. The face becomes immobile; reciprocal movements of the arms in walking disappear; the gait becomes shuffling and often festinating. This is followed by moderate to severe rigidity of the entire musculature and, finally, if the patient is allowed to vegetate in a wheel chair or bed, contractures will develop particularly in the lower extremities.

The outstanding postural defect seen in the paralysis agitans patient is the flexion attitude of the entire body with the possible exception of the wrists. This peculiarity of posture is a fundamental clinical symptom of the disease since the tremor and rigidity might be totally absent. Manual muscle tests of the muscles which maintain erect posture reveal severe weakness and loss of power as compared to the other muscles of the body.

Closely related to this flexed position are the "pulsions." The patient will have difficulty in standing still. Instead, he will be forced to make a number of small steps forward, backward or to one side. He will also have difficulty in remaining seated and may be continually compelled to change positions by standing up or sitting down or by crossing and uncrossing his thighs. This restlessness may be alleviated in some cases by the patient placing his hands underneath his buttocks.

The individual with Parkinsonism also suffers

From the Departments of Physical Medicine and Rehabilitation, and Clinical Psychology of the Jewish Sanitarium and Hospital for Chronic Diseases, Brooklyn, New York.

from a characteristic speech defect. This is evidenced by 1) rapidity of rate—the words are uttered so quickly that they tend to fall on top of one another so that the individual words may not be differentiated. The ultimate result is mumbled speech that is unintelligible. 2) Weak voice—voice support seems to decrease as the syndrome progresses, and volume is lowered. In some cases the patient has episodes where sounds cannot be initiated at all. Often the patient will complain of a "tight throat," is unable to swallow, though the tongue and the lips may have partial movement. 3) Indistinct articulation—the tongue and lips are not agile enough to move as quickly as the normal rate demands. Consonants are not clearly cut, and in many cases the listener may confuse one lingual alveolar sound with another because the nasal resonance may be lessened, or because of weak explosion of air for the letters "T" and "D." In some cases, the tongue may protrude slightly from the mouth and the control of saliva is difficult. Slowness in movement of the mandible may cause "open-mouth" speech which is very indistinct because of the inability of the articulators to make contact. The lips in this case are difficult to close and the tongue cannot reach the palate. Vowel sounds are hampered because of the inability to change the position of the oral cavity.

At the present time the various investigations concerning the personality and intellectual characteristics of the Parkinson patient have yielded rather inconclusive results. Parkinson, who first described the syndrome, believed that it was not associated with psychological symptoms. However, subsequent investigators have observed such mental disturbances as suspiciousness, irritability, compulsiveness, intellectual deterioration and depression. Gotthard Booth studied 30 cases of Parkinsonism by means of the Rorschach Test and concluded that these patients are dominated by needs for individuality, action and self-assertion towards the influences of the environment. Nijones, in a study of five groups which he differentiated according to premorbid personality structures, could find no specific premorbid personality pattern or evidence for a specific psychosis.

The purpose of the present study was to determine whether there are any personality and intellectual characteristics which are peculiar to the patient with this disease. Nine patients admitted to this hospital and diagnosed as Parkinsonism by the Neurology Service were studied. Six of these patients were white males and three were white females. The age range was 36-56 years. The mean age was 47 years. The Wechsler-Bellevue Intelligence Scale, Form I, was administered to each patient. The Rorschach Psychodiagnostic Test was administered to eight of these patients. (One patient was unable to take the Rorschach because of emotional distress caused by the extreme illness of his wife.) The records were examined quantitatively and qualitatively.

The intellectual range of the patient studied in terms of the full scale intelligence quotients was from 62 to 109. The patients distributed themselves within the following classifications: Average—4, Dull Normal—3, Borderline—1, Defective—1. The mean intelligence quotient composed of both verbal and performance scores was 87. The Verbal Scale tended to exceed the Performance Scale, the mean difference being 7 points. The patients performed relatively more effectively on the following subtests: General Information, Vocabulary, and Picture Completion. Their lowest scores appeared on the following subtests: Arithmetic, Digit Span, and particularly Digit Symbol. Analysis of their performance suggests that these subjects:

1. Have a high level of visual perception and concentration but have a low level of auditory and motor concentration.
2. Have a good range of ideas and a fund of accumulated knowledge, but their associative learning ability is impaired. Although they are alert to the world about them, they have no capacity for sustained effort and are unable to shift tasks easily.

The Rorschach records are characterized by a compulsive need to organize the percepts into whole configurations though these responses are often very poorly integrated. Klopfer states that such an approach may be "quality ambition" which suggests that these patients may have a great need to impress others intellectually but their level of intellectual aspiration exceeds their present functioning ability. The control exhibited by these patients on the Rorschach is characterized by over constriction, evasion, and repression. They are stimulated by affective situations but are unable to cope with them, thereby causing the patients either to avoid the situations completely or to react to them in a disorganized or impulsive way. The records generally take the aspects of compulsiveness. There is a need to account for every detail, which results in a loosely formed and forced response. There are indications of thought perseveration; this is the way these patients handle a threatening situation. Their approach was characterized by immaturity. The small amount of fantasy which was produced was on an infantile level. Whereas on a structured test such as the Wechsler-Bellevue these subjects produce a good range of concrete ideas, on the unstructured Rorschach they show an

impoverishment of abstract imagination, or in other words, they are confined to the obvious and the stereotyped.

The physical therapeutic measures employed in the treatment of these patients depend primarily upon the degree of severity of the disease. For patients who are bedridden, the program is naturally very limited. The decubiti which often develop on the lower areas of the back are treated with ultraviolet irradiation and constant changing of body position. Hydrotherapy and passive stretching are concentrated upon in order to mobilize the various joints which have tended to contract due to faulty body positioning in bed. If this mobilization can be accomplished, active muscle re-education is then started with particular emphasis directed towards the various antigravity muscles of the body. This would include the extensors of the neck, back, hips, and knees. In those cases where mobilization of the body has been successful, attempts are then directed towards the patient's ability to sit up. If this has been accomplished, attention is then directed towards activities for the upper extremities in order to make the patient as self-sufficient and independent as possible in relation to eating, toilet activities, and possibly some form of ambulation in the wheel chair. In order to ascertain the patient's ability to independently feed himself and take care of his toilet activities, the muscles which control grasp, flexion of the elbow, supination of the forearm, flexion and abduction of the shoulder are evaluated. The training program is then directed towards improving the various deficiencies (i.e. weakness, contractures and rigidity) found in these important muscle groups. When, in spite of these measures, the patient is still unable to accomplish these activities, then devices are employed to aid in achieving the objectives (e.g. aids for elevating the arm, aids for grasp, etc.).

The use of the wheel chair for possible ambulation in the case of a patient who has just relearned how to sit up and has reacquired some strength in his upper extremities, is open to question. Psychologically it would be of great impetus for the patient to be able to wheel himself about. The very act of moving about, however, may again create the various deformities which originally forced him to his bed existence. As a rule, the patient is given the opportunity to attempt wheel chair ambulation but is watched closely in relation to his body positioning. The wheel chair employed has the large wheels, with rims attached, in the rear in order to prevent the natural tendency of the patient to incline his body forward. In many cases, knobs are wired to the wheel rims to provide larger grasping surface for the patient with poor grasp. When, in spite of the precautions taken, the flexion attitude becomes prominent, the patient is advised against propelling himself about without the help of an aide or volunteer.

The patient who is confined to the wheel chair presents many problems to the rehabilitation service. The continual use of the wheel chair can only produce one effect, namely, contractures. These contractures are more accentuated in both lower extremities since the wheel chair maintains the hip and knee joints in a fixed position of flexion, thus producing a shortening of the flexors of these joints. In the ankle joints, the pull of gravity will produce a shortening of the plantar flexors with a resultant bilateral foot drop.

It thus becomes of utmost importance that these patients be removed from their wheel chairs for at least three hours a day. A prone position on a plinth or mat will at least tend to maintain the extremities in a neutral position. Together with this, passive manipulation even beyond the point of pain is employed to maintain as great a degree of motion as is possible in the affected joints. Active exercises employing the antagonists of those muscles which tend to shorten is also of great value in maintaining the neutral position. Hydrotherapeutic measures which incorporate stretching are sometimes of value. Standing the patient up three times daily for periods of one-half hour is perhaps the best prophylaxis to prevent flexion contractures in the joints of the lower extremities.

In the effort to make the wheel chair patient as independent as possible, it becomes necessary to check regularly his ability to perform the daily activities of living. Too often the patient will tend to regress to the point where he is unable to carry out those activities essential to his wheel chair existence. Such activities as going from wheel chair to toilet; the ability to go from bed to the wheel chair; proper handling of the wheel chair; opening and closing of a door; going from the wheel chair to shower and back; handling the telephone, utensils, and faucets, must be checked constantly. It must be remembered that the patient with Parkinsonism is too prone to give up easily in his struggle to maintain himself as independently as possible. Motivation, therefore, becomes essential for the physical therapist's handling of the patient. At times it becomes necessary to treat the patient more from the psychological point of view than from his physical disability. The physical therapist who lacks the ability to motivate the patient should certainly be the last person to treat this type of disability. The actual exercise program to maintain the patient in as good a state as pos-

sible in relation to his daily activities consists primarily of such activities as overhead pulleys, weights, and resistive exercises. The program, if it is to be effective at all, should be done at least twice daily for periods of not less than twenty minutes each session.

The program for the ambulatory patient has one primary purpose, namely stimulating and motivating the patient to be as active physically and mentally as possible. The ambulatory patients are treated in groups in order to develop and encourage spirit of competition. They are separated according to severity of involvement in order to prevent the frustrating effects of inequality of performance. The importance of grouping the patients according to the severity of their involvement cannot be overemphasized since experience has definitely proven that the Parkinson patient, who cannot perform the tasks accomplished by another patient with the same syndrome, will become discouraged and fail to attend therapy sessions.

The loss of the postural reflexes poses many problems for the patient. The inability to turn while walking, to stand up from a sitting position, to turn in bed, etc., can often result in the loss of physical independence which the patient maintains in relation to his involvement. At the present time there is little or nothing that can be done to restore these postural reflexes, but apparently there are other compensatory mechanisms which when trained can aid patients to perform these activities, which were formerly dependent upon the integrity of the postural reflex mechanisms.

The exercise program devised to aid the patient in compensating for the loss of the postural reflexes is based upon performing some of the tasks of daily living. It is essential that these exercises be performed many times during the day and with maximum effort. The patient will often experience difficulty in initiating these activities and it may become necessary for the physical therapist to actually command the patient to carry out the task he has been assigned. These abrupt orders seem to initiate movement at times. The following are the exercises performed:

1. sitting up from a supine position,
2. standing up from a sitting position,
3. supine position—lifting alternate leg and arm simultaneously,
4. walking up and down stairs,
5. turning trunk to left and then to right,
6. turning body completely around in the standing position,
7. stopping suddenly while walking,
8. lying on stomach,
9. rolling about on mat,
10. swinging arm as left leg moves forward and vice versa.

Manual muscle tests substantiate the clinical appearance of the Parkinson patient. The antigravity muscles are definitely the most affected of the body musculature. It is more difficult for the patient to extend his knee than to flex it; flexion of the spine can be performed voluntarily, whereas extension of the spine is an arduous task. Extension of the neck in many patients is impossible. Flexion deformity of the hips is sometimes so severe as to obviate all attempts to passively stretch the hips into the neutral position. Thus, it becomes necessary to strengthen the extensors throughout the body if the erect posture is to be maintained.

The use of the quadriceps boots for strengthening the knee extensors is most valuable for two reasons. In the first place it serves as an objective guide for the physical therapist in relation to the progress made by the patient. Secondly, it serves as a motivating experience for the patient as he can actually see that he is able to extend his legs against heavier weights. The neck extensors are best strengthened by positioning the prone patient so that his head extends beyond the plinth and asking him to raise his thorax as high as possible. In the same position, with the hands grasping the edge of the plinth firmly, the lower back muscles are strengthened by having the patient raise both legs (with the knees extended) off the mat. Extension of the hips is perhaps the most difficult task for the patient. In most cases passive stretching is necessary before voluntary contraction of the extensors of this joint can be elicited. Because of the pain involved, heat in the form of infra-red radiation will often precede the attempt to stretch the flexors of the hips.

In order to maintain himself as normally as possible the ambulatory patient requires constant activity. Injury or illness which forces him to bed for any length of time almost invariably results in some permanent loss of his ability to cope with the daily activities of living. Observation of this activity over a long period of time reveals the following interesting phenomena, (1) the patient will sustain himself best in those activities which are purposeful; (2) the individual will adequately perform an activity which he had acquired before the onset of the disease and conversely he will not be able to perform adequately any activity which he had not acquired prior to his illness; (3) the activities most adequately performed will be those which the individual performed with more than average skill prior to the disease. With this in mind, it becomes necessary for the physical therapist to gather all the pertinent information

concerning the patient in order that the proper therapeutic program be instituted. The sources of this information include not only the patient, but also his family, the results of psychological testing, and the nursing and social service departments. Thus, the patient who had been a boxer in his youth, given the opportunity to box, performed so adequately that he was able to teach this skill to other patients less handicapped than himself. Again, the former carpenter when given a set of carpentry tools was able to teach other patients the use of these tools. Finally, there is the former piano player who was unable to use her hands at all, yet, when given the opportunity to play the piano, was able to manipulate the keys adequately.

The ability to communicate verbally with others is most important for the patient. Speech therapy for the Parkinson patient has one primary aim, namely, to restore speech intelligibility. Therapy is considered successful when the patient's speech can be restored to the point where he can make his needs and desires known to all concerned.

The loss of rate control is one of the oustanding causes for the mumbled effect of speech. Once one word slips from the voluntary control of the patient, a cycle has been started and the resulting words come at an ever increasing rate of speed, bringing about unintelligible speech. The metronome has been found to be a very helpful aid in the attempt to correct this increased rate of word control. The metronome is set for the slowest time and the patient is asked to say one word to each beat of the metronome. If the word is polysyllabic, one syllable is said to each beat of the metronome. Poetry is employed in the early stages and if successful is followed by conversation. When each syllable is under control the patient attempts to maintain this control without the aid of the metronome. Monosyllabic words are concentrated upon first; this is followed by polysyllabic words. When success has been obtained, small phrases are used, usually employing the first word in the sentence alone, and then proceeding with the rest of the sentence, for example:

1. I/am/ter/ri/bly/so/rry/that/I/will/be/late.
2. I/am/terribly/sorry/that I will/be late.
3. I/am terribly sorry/that I/will be late.

A recording machine is used so that the patient may hear the speech he is using at the present time, which is usually muffled and unintelligible. He then compares it to the new pattern he is working to establish with the aid of the metronome. The realization of the vast difference of patterns helps to motivate the patient. Care must be taken to insure his readiness to hear his speech so that he will not be shocked or dejected by it.

Articulation is aided by (1) pointing out proper placement of weak or defective sounds, (2) having the person recognize improper placement of his articulators, and (3) stressing these sounds as they occur during the lesson. It is extremely difficult for many patients to have a strong explosion of air for plosive sounds because of their inability to have the articulators form a firm contact or, the inability to hold air behind their articulators under pressure. In cases where the mandible is continually dropped, much practice is needed in voluntary closure during speech to enable the patient to rebuild proper speech patterns.

SUMMARY

1. Parkinsonism, while a progressive syndrome, lends itself in a limited fashion to the technics of rehabilitation.
2. Disabilities of motion, postural and speech defects, are the outstanding symptoms.
3. a. The results of the Wechsler-Bellevue Intelligence Scale and the Rorschach Psychodiagnostic tests indicate preservation of previous learning but impairment of ability to learn new tasks.
   b. Patients with this syndrome tend to demonstrate compulsiveness, poor integration, and perseveration in terms of personality factors.
4. The type of therapy employed is dependent upon the degree of disability.
5. The ability to motivate the patient is essential.
6. Patients should be treated in groups, depending upon the severity of involvement, to encourage competition.
7. Purposeful activities should be an integral part of the therapeutic program.
8. Activities should be built around skills acquired during the normal state of health.
9. Restoration of intelligible speech is basis for speech therapy.

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The Role of the Physical Therapist in Bracing*

Jean Botek, B.S.

The role of the physical therapist in relation to bracing patients varies from one department to another. Instruction for the use of the brace is usually in the hands of the physical therapist, who, in addition, may be asked to assist in taking measurements for braces or checking the fit of the brace.

Considerable material relating to the engineering problems of the mechanics and construction of orthopedic appliances is available to brace makers and physicians, but very little material exists on the primary mechanics and the problems of maintenance with which the physical therapist is concerned.

Physical therapists have usually obtained their knowledge from staff physicians, and it has been related to particular patient problems. There is a need to correlate this material for the use of all physical therapists.

PURPOSES OF BRACING

The purpose for which individual bracing is done varies with each patient, but physicians frequently divide the general purposes into several groups.

The *supportive type* is used to maintain anatomical status quo through the addition of a rigid frame. It protects a weakened part from pain and fatigue; prevents a deformity when muscle imbalance exists; increases stability of posture and locomotion.

When the long leg brace is used for protection and support for patients with weakness or paralysis, a light weight metal is used and cuffs and lacing are kept at a minimum. When double leg braces are required, it may be necessary to add a pelvic band or back brace. The pelvic band gives support from pelvis to foot, and when instability persists and the trunk falls forward, the back brace supporting the entire trunk is required.

The *immobilization type* encases the affected part to prevent all motion during the disease or healing process and serves to unweight the part during locomotion. It must be more rigid than the supporting type to produce greater fixation. The joint above and below the affected bone or part must be immobilized; because of this the metal is heavy, there are few joints, and closely laced wide cuffs are used.

The *control type* is also a form of supportive brace used to rule out excess motion around a joint. It simplifies the retraining of walking patterns and may improve coordination.

The *corrective type* modifies or changes the anatomical picture by the application of pressure and counterpressures. It is frequently used to overcome soft tissue contractures in disease or following trauma, and is valuable in the maintenance of post-surgical improvements of transplants.

The psychological as well as the physical effect of braces must be considered. There may be psychological effects such as the preparation for surgery, allowing ambulation not otherwise possible, or offering an emotional lift during the waiting period of convalescence. There are also disadvantages to consider, such as creating the fear of permanent disability, and developing dependency upon the brace.

AGE FACTOR IN BRACING

Since braces must assist many types of patients at varying age levels, it is always essential to consider age, occupation, social and economic status. Jordan gives one of the best evaluations of the bracing requirements of the various age groups.

During the first weeks of life, appliances for congenital deformities may be required. In handling this age group it is necessary to consider the need for adequate nursing care, skin sensitiveness, and difficulty in keeping the braces clean. Simplicity in construction is essential; the materials used must be light and noncorrosive. The brace must retain its efficiency in spite of the greater propor-

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tion of soft tissues overlying the bones, and allow sufficient freedom for normal development.

In dealing with the ages from two to twelve years, it is necessary to consider the activity of the child. The proper relationship between the required strength of the brace and the weight which has to be borne must be determined and again, simplicity helps the rapidly growing child handle the brace with more independence. For economic reasons, construction of braces for the lower extremities must permit periodic lengthening without the problems which result from poor alignment at the joints.

In adolescents and socially active adults, the cosmetic factor of braces assumes great importance since in this age group unsightliness often results in nonuse at a time when wearing the appliance is essential. To overcome this factor, more elaborate and complicated braces with improved appearance are used.

For other adults, vocational problems must be considered: a farmer may be much better off with a sturdy joint-free brace attached to a heavy shoe; while a city executive must have a light weight, flexible brace with knee and ankle joints which may be controlled under the trousers, and with a sandal fitting inconspicuously into an ordinary shoe. A man working in a factory or on a concrete floor may require shock-absorbing qualities, and proper insulation of the metal portions of the brace may be vital to an electrician.

The indications for braces in elderly people differ from those in other age groups as dwindling vitality must be preserved. Obviously, orthopedic appliances for the less active aged patients differ in principle from those for the man who performs heavy manual labor. Geriatric bracing utilizes great simplicity, light weight material, and generally the employment of support rather than correction.

CONSTRUCTION MECHANICS OF BRACES

A brace is a substitute mechanism limited by two factors: the specific material used, and the fact that it is applied to the outside of the body. Even the best brace deteriorates with time. Braces must be accurately fitted, frequently repaired and refitted, and for children, continually changed. The individual parts of a brace must have not only strength, but they must be able to withstand hundreds of repetitive motions daily.

The upright bars of the brace framework are constructed of various metals, plated with nickel or chrome for resistance to corrosion. These bars are connected by metal cuffs extending about half way around the calf or the thigh and padded with suitable material so that undesirable pressure is avoided without sacrificing stability.

Materials alter the appearance of braces but there is a fundamental mechanical principle underlying all braces. To be effective, all supportive and corrective types of appliances must be constructed on the three point force system. In this, two forces distributed over the length of the brace in one direction are opposed by a counterforce equal to the sum of the other two. The chart illustrates how this system applies in various conditions.

Materials

Aluminum alloys have preference wherever lightness, good structural adaptability, relative ease of fabrication and attractiveness of appearance are necessary in orthopedic appliances. They are easier to cut, bend, shape, rivet, and braze than steel. They require simple technics and very low temperatures for heat treatment. Despite the fact that the costs on a pound basis is somewhat higher than steel these alloys may result in a lower over-all price for orthopedic units. Rigid aluminum braces are bulky but they are much easier to fabricate than steel.

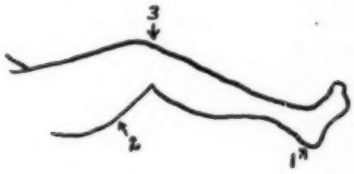
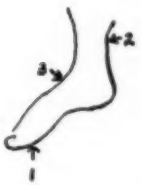
Steel varies in chemical composition and it is important that the material used should lend itself to riveting, welding, and brazing and have flexibility. Spring steel, used in corrective type braces, permits limited flexibility and does not interfere with the ability of the metal to endure the strain of the impact load. Steel used to immobilize a part is not flexible and a structural shape which contributes to rigidness is used.

Stainless steel may be required to eliminate salt water corrosion if orthopedic appliances are to be used in pools or along the sea coast.

A thin layer of elemental metal, such as nickel or chromium is usually applied by electroplating over the metal parts of a brace to prevent corrosion.

Plastics of several types have been used for artificial limbs, lightweight stiffeners, and arm-hand splints. Rigid plastic appliances may be as satisfactory as those made from steel or aluminum, if heavier material is used. For example, to give the same rigidity a device of plexiglass or lucite will have to weigh about one and one-half times as much as the same apparatus fabricated of aluminum. Research is now under way to substitute plastics for metals but the data now available is incomplete.

Molding leathers are heavy weight and used for shaping body jackets and neck braces. The leather is soaked, stretched tightly over a plaster of paris mold (body shell) while wet, and then baked dry. After drying, it assumes the form of the mold.

Part to be Braced	Force 1	Force 2	Force 3 or Counterforce
	Acts on pelvis from anterior direction	Acts on anterior thoracic wall just below level of clavicle. Sum of several forces.	Opposes 1 and 2 in the postero-antero direction. Acts on back, must equal force 1 plus 2
Spinal Brace	In brace this force is exerted through the pelvic frame	Exerted through thoracic frame on thorax not shoulder girdle	Acts on conversity of spine; must be adjustable. Exerts its action over a still larger surface of the back
Long Leg Bow-leg Brace	Acts on medial border of ankle joint	Acts on medial surface of knee joint	Acts on lateral surface of leg, below calf band
	In brace through ankle pressure pad attached to stirrup	Through knee pressure pad, attached to internal lower leg bar	Through pressure pad attached by hinges to external lower leg bar
Mild Contraction Knee Splint 	Acts on posterior and lateral portions of heel	Acts on posterior and lateral thigh	Acts on anterior portion of patella
	In brace through shoe upper or foot cuff	Through wide posterior thigh cuff	Through broad adjustable padded knee cap
Drop Foot 	Acts on plantar surface of forefoot	Acts on posterior portion of calf	Acts on anterior portion of ankle above and below joint
	In brace through metal footplate on plantar surface of foot	Through calf cuff on posterior portion	Through down-stop and shoe upper

Cover leather is a middleweight material that is used to cover the outer surface of a metal or plastic frame but it is not placed against the skin. Strap leather—pig, deer and elk skins are good examples of cover leathers.

Lining leathers cover padding and are placed against the body surface. These must be soft, thin, and fairly durable like sheepskin, horsehide, suede, doe, and soft pig skin.

Paddings such as sponge rubber, lambs wool, and wool felt are placed on the inside of the metal and are covered with lining leathers. They vary in thickness and type depending upon the area and function.

Woven materials—cotton webbing and cotton strapping materials are durable, strong, and comparatively nonelastic, while synthetic materials such as nylons, vinyons, and Orlon are much lighter in weight and less absorbent but more easily cleaned. Allergy to synthetic materials is more common than to cotton.

PRINCIPLES OF BRACING

Lower extremity braces constitute a most important part of bracing and may vary in type depending upon active motion, strength of motion and desired amount of weight-bearing. They must afford sufficient support during sitting, standing and locomotion, and continually assist in the maintenance of proper posture.

Common to all long leg braces are the supporting metal uprights which brace the extremity on medial and lateral sides, running parallel to the longitudinal axis of the extremity. These bars, with inserted joints at the ankle, knee, and trochanter, are connected by means of semicircular bands. The bands, with adjustable straps around the thigh and calf, maintain the fixed position of the limb within the brace. Both longitudinal bars and transverse connecting bands form the steel or aluminum skeleton of the brace. The connecting link with the ground is the pattern sandal or the caliper-stirrup attachment to the shoe. (See Figure 1.)

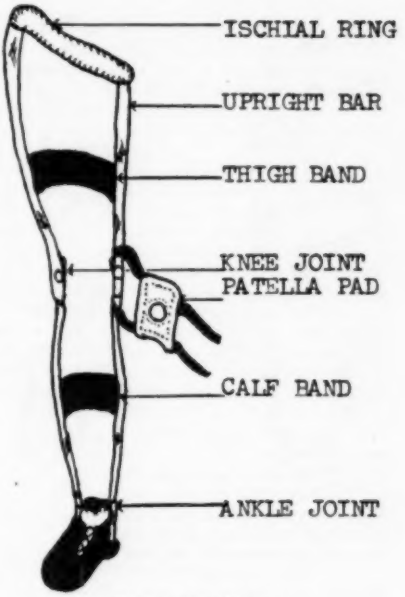


Figure 1. Long leg brace.

Joints

Every joint of a brace is a complicating factor because it is a weak spot. In order for it to stand up under the stress of weight-bearing and repetitive motion, it must be sturdy. (This often makes the brace heavy.) It's proper construction involves an increased amount of labor, thereby increasing the expense of the brace. The joint should be milled on a lathe to prevent wear, as a plain lap joint held with a simple round rivet will soon bend, wear, or break. Elimination of one or more joints in a brace increases its stability and life, decreases its weight and cost, and reduces difficulty in its construction.

A variety of joints are used in leg braces but these may be separated into four groups: 1) free joints, allowing full joint action; 2) limited joints, permitting only slight motion; 3) stop joints, which allow full motion in one direction and limit motion in the opposite direction; 4) lock joints, where motion can be discontinued by locking the joint action. There are various types of lock joints.

The proper placement of the joints of a leg brace assumes even more importance than the type of joint used, and is one of the major problems in brace construction. The joint must allow maximum movement without injury to the joint or strain during walking.

The hip, because of its three planes of motion, is one of the most complex joints to brace. The axis of flexion and extension lies a little ahead of the greater trochanter. When attached to a pelvic band, the brace joint should lie at the same level and slightly anterior to the trochanter in order to prevent binding and movement in external and internal rotation.

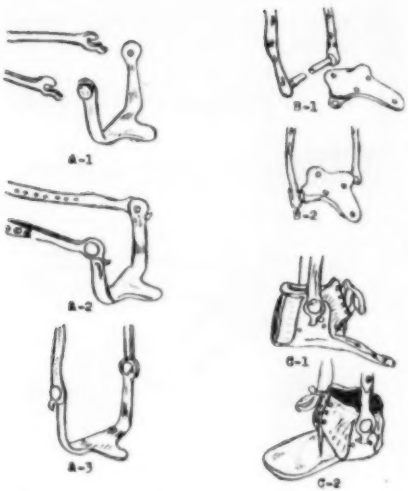


Figure 2. Foot attachments for double-bar leg braces.
A. Stirrup with caliper slot joint.
B. Caliper with shoe plate.
C. Leather sandal with ankle-stop.

from JORDAN, Figure 71

In the long leg brace, it is important to remember that the joint should be placed in the axis of motion of the knee, which falls through the femoral condyles rather than through the anatomical joint space. This means that the hinges must be placed opposite the midpoint of the femoral condyles which can be identified easily. Usually the joint is set posteriorly, about ¾ of the way back of the midpoint of the knee, thus allowing flexion to ninety degrees without pressure on the popliteal space.

Placing the knee joint too high interferes with knee flexion and may cause unnecessary pressure on the anterior margin of the tibia. When the joint is too low, the thigh cuff exerts excessive pressure and there is an open space in the front of the tibial cuff and pinching in the back. Placing the knee joint too far forward will interfere with flexion, and when it is too far back, there is again pressure on the anterior parts of both thighs and cuffs.

Shoe Attachments *(See Figure 2.)*

It has been found that the stirrup type ankle joint provides the most nearly physiological motion. Usually the artificial ankle joint is centered transversely about ¼ to ½ inch above the tip of the lateral malleolus.

The caliper type of ankle joint does not permit normal ankle motion and this in turn may result in instability in the leg. Since the caliper pin enters a tube which is fastened into the shoe heel, the shoe is converted into a part of the brace, and with ankle motion a strain is placed on the patient's ankle and brace. This is even more hazardous when a heel wedge or lift is used; however, the stirrup type ankle joint may be combined with the caliper when a detachable brace is required.

A sandal pattern, consisting of a metal sole with an internal lateral flange for the ankle joint, may be connected with the lower leg bars at the ankle joint. The foot is held in the brace by means of a lined leather sandal or at least an anklet which facilitates the use of a simple stop for plantar or dorsiflexion at the ankle joint.

Additional Equipment

Added supports to the basic brace construction depend upon the need. The ischial ring if needed must be part of the original brace; but the pelvic band, patellar pad and T strap may be added as needed.

The modification of the long leg brace depends on the purpose for which it is to be used, that is, for control, protection, correction or immobilization.

In fractures and diseases preventing weight bearing but allowing ambulation, an ischial ring is added to the long leg brace so that the body weight may be borne against the tuberosity of the ischium and transmitted to the shoe at the point where the brace is inserted into the heel. There may be slight motion at the ankle but no true ankle movement. The Thomas type walking caliper is perhaps the best known unweighting brace.

To increase support from trunk to foot, a pelvic band may be added to a single or double long leg brace. This covered and added metal band encircles the pelvis between the anterior superior spines and the trochanters and is attached to the leg brace by means of trochanteric joint or external bar extension piece. In some instances, where bilateral long leg braces are necessary, only one is attached to the pelvic band. This facilitates removal and helps ambulation.

The kneecap most often used to correct a flexion contracture is a square of padded leather with a hole cut out over the patella; evenly buckled between the outside and inside uprights. Another protective kneecap is a narrow rectangular shaped leather piece attached by means of narrow buckled straps. This is placed on the proximal leg bars

similar to the larger patellar pad. It is loose enough to allow slight knee flexion. For the correction of knock-knees and bowlegs, the patellar pad is attached from one bar around the knee and back to the same bar. In knock-knee, the pad is fastened to the outside bar and pressure from the medial side of the knee is used; the reverse is true in bowlegs.

The leather T strap, named because of its elongated triangle or T shape, acts on the ankle to correct foot deviation. It averts corrective pressure by pulling the foot toward the upright to which it is buckled. In supination-inversion (varus) deformity, the strap is applied to the inside bar; with pronation-valgus it is buckled to the outside bar for foot correction to the neutral position.

THE PHYSICAL THERAPIST'S RESPONSIBILITIES

Measurement of Braces

A primary requirement for proper bracing is correct and adequate measurements. Usually the brace maker, or appliance company representative takes measurements under the direction of the doctor. The physical therapist often assists, and at times may be responsible for the measurement tracings. Extremity tracings made on heavy paper are completed by specific circumferential measurements. For accuracy, measurements and tracings must be taken next to the skin not over clothing or dressings. The measuring tape should be held snugly but not tightly, and the pencil should always be held vertical to the paper.

When shoes are required, they are usually furnished by the patient and sent along with the order. The shoes should be made of good substantial leather and should not have rubber or composition soles for few brace makers will accept them. Whenever braces are in need of repair, it is important that the shoes of the patient accompany the appliance; otherwise, the brace maker cannot balance the brace.

Checking Patient Bracing

The physical therapist has frequent contact with the patient and part of his responsibility includes education of the patient and the parents (if the patient is a child) in wearing the brace and keeping it in good working order. Careful observation of the patient should be continued during the intervals between the doctor's visits. Wear on heel and sole, overtight lacing of shoes, excess pressure from calf and thigh bands must be noted.

In the hip joint, there is always a tendency for the thigh to go into adduction and flexion. In the knee joint, the strong hamstrings tend to flex the knee; and in the ankle joint, the foot tends to drop down into equinus due to the force of gravity and pull of the strong calf muscles. The brace must prevent deformity and points of pressure and excessive wear may indicate inadequate or incorrect bracing.

Some of the most common points of pressure in leg braces are the inside of the pelvic band over the crest of the ilium, and the inside of the thigh and calf bands, trochanter or condyle pads, especially on the inside of the knee and the inside of the T strap at the ankle. Any wrinkled or stiff leather touching the skin with even the slightest friction creates pressure. At no time during walking, standing, or sitting should the edge of any cuff cut into the soft tissue of the leg or buttocks. It is also important to check the foot and knee to prevent a pressure area against the inner bar from pronation or knock-knee.

In checking an ischial-bearing brace one must be sure that the foot is not flat in the shoe and that about 3/16 inch clearance remains between the heel of the foot and the inside of the shoe. With this type of brace, the physical therapist must note whether a child has grown away from the ischial ring, for if he has, the brace offers no support and complete weight-bearing may occur.

If a kneecap is worn loosely the knee sags forward, sacrificing stability; if it is too tight, the knee is pulled into hyperextension, creating deformity and faulty weight-bearing. The actively growing child who does not use his brace correctly develops pronation and knock-knee and finally tibial torsion. As the thigh and calf develop, those bands become too shallow, tending to push the thigh forward and out of alignment.

If the physical therapist notices that the brace no longer fits, the patient should be seen by the doctor as soon as possible. A progress note calling attention to possible adjustments should be made unless the physical therapist is able to attend the doctor's clinic with the patient and talk over the brace problem.

Patients should know that it takes a little time to get acquainted with a brace and learn all its tricks, and that it pays to give braces the best treatment and protection. These supports of steel and leather, jointed and strapped and laced, are expensive equipment, repairs are costly and when only one brace is on hand, it may have to be returned to the brace shop for several days. A daily routine of inspection may prevent the braces from breaking down.

The parents and the patient should be told what they can expect from the particular appliance.

They should know that a brace sometimes feels uncomfortable at first, but if it fits properly, the wearer becomes accustomed to it and is glad to have the support. If, after wearing it a day or two there is discomfort or chafing of the skin there is something wrong that should be put right.

CARE OF SKIN AND CLOTHING

It is as important to protect the patient's clothing as it is to care for the brace, for there is frequently abrasive, rubbing damage from the rigid non-yielding appliance. Trouser legs can be easily protected by lining the inside with a section of resilient or slippery material. This prevents a gathering, binding, and cutting action by the side joints and uprights. Cotton and rayon materials with adhesive backing can be pressed on the inner surface of the clothing to be protected, but slick nylon linings must be sewed on.

Skin hygiene must be emphasized for tender skin not exposed to sun and air chafes easily. Skin should be well dried to prevent chafing. Skin under a weight-bearing ischial ring can be toughened by the application of powdered alum in rubbing alcohol or compound tincture of benzoin. The skin between the toes must be kept dry and powdered, and fresh socks once or twice daily help to absorb moisture. One pair of heavy shoes worn constantly without change has little chance to air and dry out, therefore when possible, the patient should have two pairs of shoes. Some doctors ask patients to wear long heavy stockings (preferably wool) on the braced leg in winter, and to expose the leg to sun in summer. The affected limbs should be kept warm, day and night, in summer as well as in winter. The mother should be taught to think of the brace as she thinks of the child's clothing.

BRACE CARE

The leather parts of a brace, especially the lining, usually show deterioration first. The stretching of leather, which causes wrinkles and consequently chafing, and its porous quality, makes frequent renewal imperative, particularly for the elderly patient with impaired circulation where decubiti may result.

Some children's braces are assembled completely and then the metal bands are covered with leather, so that the brace can be recovered every three months. Perspiration is hard to control and is second only to urine as a cause of rapid deterioration. In some climates, dampness causes mold. The replacement of leather may be a nuisance and expense, but in the long run it is less costly than the irritation to soft tissue.

Saddle soap or soap and water have been accepted as the only cleansing agents for leather. Saddle soap is preferred, and if applied in accordance with the directions which accompany it, will be quite effective, but it is necessary to wipe it off carefully and thoroughly or clothing will be injured. When soap and water are used drying takes several hours and the wearing of the brace is delayed. Ordinary cleaning fluids should not be used because they damage and dry leather.

Children's shoes wear quickly and when used with a brace it is of utmost importance to keep them in repair. The heel of the shoe may become so worn that the steel framework of the brace touches the ground. Even slight wear of the heel may change the position of the brace, throwing the hip and knee out of line. If heels and/or soles are built up, they should be kept exactly as prescribed even if it means weekly repairs. When a shoe is pulled on over a foot plate or "sandal," an active child may get sand, grit, or pebbles into the shoe. These may act as an abrasive and wear the plate to a cutting edge which will cause damage to the shoe.

The joint in a brace should work as freely as the joint it approximates. Oiling is needed wherever two metal parts move together, and the right amount depends upon how long each day the brace is used. Any excess oil should be wiped away to prevent soiling of clothing and injury to leather. The type of oil used for sewing machines and general household lubrication will work successfully, or a half teaspoon of vaseline melted and applied will form a protective coating to the part. Oiling is not always a cure for stiffly moving joints which can handicap weakened muscles. Activity may have thrown the bars out of alignment and only a slight deviation will create friction in the two parts of the brace joint.

The screws used with extension braces frequently loosen and weaken the support of the braces. It is important therefore to have on hand a supply of screws of the right size in the event any are lost. If the screw material is so soft that the thread wears down, new screws should be put in at once. Rivets which fasten buckles should be watched because the unfastening of a strap may have serious consequences.

Emergency repairs are the constant concern of the physical therapist. Unless there is a brace making department in the same institution, or one can be easily contacted, a physical therapy department should have some basic tools and at least one physical therapist should know how to use them. These

should include a pair of bending irons, screwdriver, pliers, small rat-tailed file, shoe lacing tipper, and eyelet setter. The supplies should include screws of the right size for replacements, and shoelaces of the right length and thickness, as well as sponge rubber to be used for relief of pressure by the brace.

SUMMARY AND CONCLUSIONS

Braces and supports have been used as part of medical treatment for hundreds of years. Through the years the types of braces have changed to become more complex and varied. It is important to acquaint the physical therapist with their purpose, types and upkeep.

Braces may be used to relieve pain and fatigue, prevent deformity, correct soft tissue contractures, increase stability and assist in locomotion. The psychological effect on the wearer may also be an important factor in treatment.

Braces may be used for passive support, active correction, unweighting the part, or to substitute for lost muscle action. Brace types vary not only with the anatomical part, but also with the appliance maker's technics and doctors' theories. Mechanically, however, there should always be a three-point system of corrective forces. This is sometimes called the two thrust and one counter thrust system. When pressure is applied in such a manner, maximum correction with minimum strain is possible.

The accurate measurement of braces whether by tracings and circumferential measurements, or by the preparation of plaster casts has an important bearing upon the fitting of the finished brace. Since physical therapists are frequently expected to assist in these measurements, some knowledge of these procedures is essential.

After the completed brace is checked by the doctor and received by the patient, instruction for proper care should be given to both patient and parent by the physical therapist. Another responsibility of the physical therapist is constant observation of the patient and his brace to prevent and to correct poor alignment. It may be necessary for the physical therapist to make emergency repairs, and any faults that appear must be called to the attention of the doctor.

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Meet Our New Contributors

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Jean Botek, Physical Therapist, Los Angeles County General Hospital, was graduated with a B.S. degree from Chicago Teachers College, June 1944. One month after graduation she enrolled at the University of Southern California for her preparation in occupational therapy. She received her certificate from that institution, July 1945.

As occupational therapist in the Army of the United States, Miss Botek served in army general hospitals until 1947, when she became Coordination and Occupational Therapist, Baystate Treatment Center, Boston, Massachusetts.

Miss Botek received her physical therapy training at the University of Southern California. She is a member of the American Physical Therapy Association, the American Registry of Physical Therapists, and the American Occupational Therapy Association.

Audrey Smith Hoffnung, Director of Speech Therapy, Jewish Sanitarium and Hospital for Chronic Diseases, took her undergraduate work at Brooklyn College, graduating with a B.A. degree in 1949. She received her M.A. from Teachers College, Columbia University, one year later.

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Emily Johnson Holland, Staff Physical Therapist, Central Convalescent Hospital, Greensboro, attended Guilford College for three years prior to entering Duke University for physical therapy training.

(Continued on page 251)

The Role of Physical Therapy in the Rehabilitation of Burned Patients

Emily Johnson Holland

Much has been written on the surgical and medical aspects of the acutely burned patient, and on the grafting and restorative procedures of the convalescent stage; there is little in the literature on the physical management of the orthopedic complications which so frequently result. The purpose of this paper is to show what can and should be done by the physical therapist, and how to accomplish it.

Burns may be defined as a reaction of body tissue to some noxious agent, which may be thermal, chemical, radiant, electrical, or atomic, which results in tissue death. According to Wallace, they may be classified: (1) by depth or degree, (2) by extent, (3) as major or minor.

The degree of a burn is determined by its depth. One which involves solely the epidermis, with redness, swelling, and tenderness, but no blistering, is a first degree burn; one which produces a blister between the epidermis and dermis, with redness, is a second degree burn; while one which destroys the skin continuity is a third degree burn.*

The extent of the burn is important from a prognostic viewpoint. If more than 10% to 15% of the body surface is involved, the condition is serious, and a burn of more than 40% of the body surface can be fatal. A burn involving only 1% of surface can be serious or fatal, if about the mouth, face, or head. A burn around the mouth often produces instantaneous inhalation of hot vapors or flames with obstruction of the passageways due to a local irritant action with edema and the accumulation of mucous.† Burns around the ears generally affect the scalp, and "burns of the scalp are peculiarly susceptible to erysipelatous inflammation," (Pack and Davis) which increases the severity of the burn.

"Major or minor" differentiation is useful only to determine whether the patient will be seen as an outpatient or on the ward. Wallace states:

"A minor burn must

a) be seen within eight hours of receipt;
b) be not more than 1% of the body surface in extent;
c) not be of 3rd degree in depth;
d) affect surfaces removed from flexures, i.e., must not affect hand, cubital fossa or axilla, popliteal fossa or groin;
e) affect surfaces removed from areas liable to be contaminated by natural secretions; i.e., must not affect face, genitalia, or perineum."

The subject of shock is a complex one. Primary shock depends on the amount of pain produced, and is rarely fatal. Secondary shock, on the other hand, is the cause of 60% of all deaths from burns. Secondary shock occurs after the recovery from initial shock, and is characterized by low blood volume and hemoconcentration. As there is a great loss of plasma through the surface of the burn, the *first* aim of treatment is to restore the blood volume by immediate fluid replacement therapy using whole blood, plasma, serum albumin, or physiological saline, their preference being in the order named.

After the shock is under control, debridement is carried out under general anesthesia, and dressing is done with vaseline gauze (of a mesh either coarse enough to remove easily or fine enough to prevent granulations from growing into it) followed by pressure dressings. The purpose of these pressure dressings is to seal off the wound from contamination and help prevent leakage and edema. This technic is superior to the tannic acid method, because the tanning process forms a crust which is very susceptible to infection, and also

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*Pack and Davis: *Burns; Types, Pathology and Management.* Some authors subclassify, or extend the classification. Dupuytrens continues: Fourth degree—down to subcutaneous tissue; Fifth degree—encroachment on muscles; Sixth degree—carbonization, or disorganization and charring of the tissues.

†Dr. John Adams, N. C. Orthopedic Hospital, Gastonia, N. C.

often produces liver necrosis. It is important to avoid infection, since infection will increase scarring, prolong the period of hospitalization, reduce the "take" of the graft, and may be fatal. It may be controlled by sterile dressing technics, wet dressings to promote drainage, and antibiotics.

While these dressings are being used, and frequently changed, hydrotherapy may be employed for soaking off the dressings painlessly, aiding in the removal of sloughs, and facilitating earlier, more painless motion of the joints involved.

Early physical therapy consists of positioning and proper splinting in a functional position to prevent deformities. This is the surgeon's responsibility. Motion by the physical therapist may be started *before* the grafting procedures. The first grafting should be around the joints so that as little time as necessary is lost in mobilizing the joint.

The purpose of the physical therapist in the convalescent stage is to assist in overcoming contractures, especially in the hand, shoulder, hip, and knee.

Besides the contractures which develop due to pain, position and necrosis, arthritic changes, destruction, and ankylosis occur in joints near to but not included in the burned area. The slough and necrotic tissue may act as foreign proteins and release concentrated toxins that are deleterious to the articular cartilage. The immobility of joints adjacent to burns will in itself produce degeneration of cartilage. A combination of these factors is probably responsible for the extreme degenerative changes seen.

Because of the extreme initial pain, the patient becomes severely anxious and fearful of any movement, and oftentimes will scream at the prospect of being touched or moved. This apprehension is understandable but none the less creates a problem, as do the cumbersome dressings or suspensions, both of which tax the ingenuity of the physical therapist.

A. B. Wallace, in his article "Treatment of Burns, a Return to Basic Principles," summarizes the principles of local treatment:

1. To cause no further local trauma with irritating local applications.
2. To encourage the natural barriers to infection—
   (a) by keeping the burned area dry,
   (b) by immobilization of the affected part.
3. To control oedema around the burn and the escape of fluid from the burned surface—
   (a) by pressure dressings,
   (b) by elevation of the part.
4. To encourage the return of function by allowing free movement as soon as possible after ten days.
5. To skin graft in deep burns as soon as possible.
6. To assist the separation of sloughs.
7. To ensure satisfactory rehabilitation of the patient and provide any necessary follow-up treatment, including x-ray therapy for keloid, and plastic surgery to restore function and appearance.

The physical therapist takes a part in points 2. and 3. by aiding in positioning and immobilization to prevent deformities. The physical therapist may assist in point 6. by using continuous baths for local affectations. The most important point in the convalescent stage is number 4., where a great deal of patience, time and ingenuity may be required. The motions must at first be passive, to gain the patient's confidence and evaluate the amount of anxiety or actual contracture. The patient must be encouraged and inspired to perform active exercise as soon and as much as possible, to strengthen muscles which have been at a disadvantage, and to stretch contractures and prevent deformities.

Since the knees and hips are particularly susceptible to flexion and extension contractures, stretching must be done in both directions. If the patient is old enough and intelligent enough, he can help with rehabilitation by practicing and working continuously at deep knee bends for example. Early weight bearing should be encouraged.

The axillary burn produces an adduction contracture of the shoulder, which is difficult to correct, due to the mobility of the scapula. After the webbing and scarring have been surgically released, passive stretching with shoulder girdle control may be begun. Arm hanging and active stretching may also be done when advisable and when the patient's condition permits.

The fingers are a special problem. Each case is different. The most difficult type to manage is the deep burn of the dorsum of the hand, which results in a "claw hand." There is hyperextension of the metacarpophalangeal and distal interphalangeal joints, and flexion of the proximal interphalangeal joints. The lateral slips of the extensor mechanism displace palmward to act as bowstrings and become accessory flexor tendons. "Any contraction of the interosseus muscles will now increase the hyperextension deformity rather than initiate flexion of the proximal phalanx. There is thus no muscle, save the lumbricals, which can initiate [this] flexion, and this muscle is far too weak to do so." (Braithwaite and Watson) This condition cannot

be corrected with physical therapy alone, except in assisting in designs for splinting and in cooperating with the reconstructive and plastic surgeons. Bunnell, in his *Surgery of the Hand*, illustrates several types of splints which may be adapted to the particular case.

It must be noted here that forced or repeated stretching of the interphalangeal joints produces more edema and therefore more fibrosis and contracture; however, the metacarpophalangeal joints do not exhibit this reaction.

Active exercise and muscle reeducation are also extremely valuable following plastic surgery (point 7.) to restore function and appearance.

All the modalities of rehabilitation are at the physical therapist's disposal. Hydrotherapy may be used to soak off bandages and remove slough, and to give passive, painless ranges of movement to all joints. Massage may be used to loosen and mobilize scar tissue in the convalescent stage. Galvanic and faradic stimulation are valuable, especially in the hand, in order to increase joint motion and prevent contractures.‡ Muscle reeducation is important in all cases, and is one of the main goals in treatment. Ultraviolet or actinotherapy is useful in helping to clean up recipient sites for grafting, but the dosage is difficult to determine, since the dosage which is used to accomplish the desired effect on the granulations may be much too high to be tolerated on the surrounding tissues unless they are shielded. Passive and active exercises are the most frequently used method of treatment. "Active exercise is best."

The physical treatment of a burned limb is like that of any other "mangled extremity"; i.e. as much as can safely be done between restorative surgical procedures should be performed. (A split skin graft cannot stand as much pressure as full thickness skin.§) The restoration of function and the prevention of deformities and contractures are the aims of physical therapy. *Early* mobilization is important, and the patient should be encouraged to keep up his exercises during those parts of the day when the physical therapist is not in attendance.

‡Dr. John Adams, N. C. Orthopedic Hospital, Gastonia, N. C.

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Polio Pledge

If Polio Comes to My Community

I Will Remember to

Let my children continue to play and be with their usual companions. They have already been exposed to whatever polio virus may be in that group, and they may have developed immunity (protection) against it.

Teach my children to scrub their hands before putting food in their mouths. Polio virus may be carried into the body through the mouth.

See that my children never use anybody else's towels, wash cloths or dirty drinking glasses, dishes and tableware. Polio virus could be carried from these things to other people.

Follow my doctor's advice about nose and throat operations, inoculations, or teeth extractions during the polio season.

Be ever watchful for signs of polio: headache, fever, sore throat, upset stomach, tenderness and stiffness of the neck and back.

Call my doctor at once and, in the meantime, put to bed and away from others any member of my family showing such symptoms.

I Will Not

Allow my children to mingle with strangers, especially in crowds, or go into homes outside their own circle. There are three different viruses that cause polio. My children's group may be immune to one of these. Strangers may carry another polio virus to which they are not immune.

Let my children become fatigued or chilled. Overtired or chilled bodies are less able to fight off polio.

Take my children away from our community without good cause. Polio time is the time to stay at home and keep with everyday companions.

(Continued on page 272)

A Work Plan for the Thoracic Surgery Patient

Wilma-Nell Harmony, B.S.

The following material is given to the patient who has been selected for thoracic surgery. It is a comprehensive outline of the aims and objectives of his proposed treatment and constitutes an important part of his preoperative preparation. Understanding and acceptance of treatment have a direct bearing on recovery.

A board of experienced physicians have determined that your particular type of tuberculosis will best respond to some form of thoracic surgery. Along with this surgical therapy your surgeon has prescribed a preoperative and postoperative exercise program designed to assist you to maintain a normal posture and to regain functional use of your arm and your shoulder which may be temporarily disturbed by the operative procedure. A physical therapist will tell you what possible deformities may occur and what can be done by YOU to prevent these malformations from developing.

Preoperative Procedure (Plan A)

1. An anterior and posterior posture picture will be taken in order to give you visual evidence of your posture before and after surgery.
2. Your range of motion will be measured and recorded in order to give a basis of what you are capable of achieving in the use of your arm.
3. Your posture will be evaluated in order that any deviations from the normal may be discovered and corrected before surgery.
4. An explanation will be given to you regarding deformities which may occur and instruction given as to what you can do to prevent them.
5. Within 24 hours following surgery a physical therapist will visit you in order to exercise your operated arm and shoulder.
6. Daily visits will continue for the purpose of keeping you informed on your progress in physical therapy and to assist you in regaining your normal posture.

Chief, Physical Therapy, Veterans Administration Hospital, Livermore, California.

Reviewed in the Veterans Administration and published with the approval of the Chief Medical Director. The statements published do not necessarily reflect the opinion or policy of the Veterans Administration.

Immediate Postoperative Procedure (Plan B)

Within 24 hours following surgery.

A. Bed posture is important.
   1. Use your bed mirror to get proper alignment: shoulders even, hips even, spine straight, head tilted to operated side.
   2. Use only a small pillow under your head to prevent forward thrust head.
   3. Use sand bag on chest and point of shoulder of operated side to prevent forward shoulder.

B. Arm exercises are either passive, active-assistive, or active.
   1. Flexion: Starting with arms at sides and palms facing side, raise your arm forward and up as high as you can. Three times.
   2. Abduction: Starting with arms at sides and palms facing side, raise your arms sideward and up as high as you can. Three times.
   3. Rotation: Starting with your arms in a reverse T position, rotate your arm at the shoulder downward and upward. Three times

C. Shoulder exercises are designed to maintain a freely moving scapula.
   1. Lift your shoulders up toward your ears by hunching. Three times.
   2. Rotate your shoulder forward then backward in a circular motion. Three times each way.
   3. Place your hands behind your back and squeeze your shoulder blades together. Three times.

By the second or third postoperative day you should be able to perform the above exercises while sitting squarely on both hips with the feet over the edge of the bed.

By the fourth or fifth postoperative day you should be able to perform your exercises while you stand in good alignment in front of your bed mirror.

Have your bedside table placed at your operated side and use your operated arm at all times when necessary.

Intermediate Postoperative Procedure (Plan C)

You are now on your regular ward and should be out of bed at least two hours daily. During your up-time you will perform the exercises given you while you were on the surgical ward. A physical therapist will supervise you once during the day, and you will be expected to perform the exercises at another time of the day by yourself without supervision. In addition under your physician's prescription you may be permitted to include the following abdominal exercises:

1. Upper abdominals: From a supine position

with knees flexed and feet flat on bed, raise your arms and shoulders forward, clearing the bed about six to eight inches. Three times.

2. Lower abdominals: From a supine position with knees flexed and feet flat on the bed, flatten your back to the bed and pinch your buttocks together. Three times.
3. Oblique abdominals: From a supine position with knees flexed and feet flat on bed, twist your thorax as you raise your head and shoulders from the bed and touch your left knee. Three times. Repeat same exercise to the opposite side. Three times.

Always keep a close watch on your bed position, remembering to use the bed-mirror to keep the body in good alignment.

When you are up, try to be conscious of and try to check frequently your posture before the bed-mirror. There is a full length posture mirror in the Occupational Therapy room which you are encouraged to use during your up-time.

A physical therapist will keep you informed and instruct you in what you must do to maintain your normal posture and to regain the use of your arm. REMEMBER, it is up to you to DO the actual activity which is designed for YOU.

Advanced Postoperative Procedure (Plan D)

Approximately two weeks following surgery you will be able to take your exercise training in the Physical Therapy Clinic, i.e., if no further surgery is contemplated for you. These exercises are similar to those you have been doing. However, the assistance of several mechanical aids will be added to the program to facilitate the improvement which has been accomplished. All therapeutic activity will be adjusted to your tolerance and will be increased in direct proportion to the improvement of your condition. Remember, you are NOT endeavoring to become a "muscle-man." Our aim is to assist you to maintain acceptable posture and to retain orthopedic function within normal limits. Since the primary purpose for which you are here is to arrest your tuberculosis, you must at all times guard against increased respiratory activity and fatigue.

Modalities and exercises available for promoting physical recovery:

A. Shoulder wheel may be adjusted to your height and resistance.
   1. Stand with your operated side to the wheel, grasp the handle (at maximum height which you can reach) and revolve the wheel three revolutions clockwise and three revolutions counterclockwise.
   2. Face the wheel and again turn the wheel three revolutions clockwise and three revolutions counterclockwise.

B. Wall weights may be weighted from 2½ pounds to 12½ pounds.
   1. Face the wall and grasp the weight handles, one in each hand and with elbows kept straight during the entire movement:
      1. Pull the handles downward until your arms are pointed down approximately 45 degrees from the body. Three times.
      2. Bring your arms sidewards at shoulder level until even with your body. Three times.
      3. Raise your arms over head about 45 degrees from the body line. Three times.
   2. Now stand with your operated side toward one of the wall weights, grasp the handle, and with elbows kept straight during the entire movement:
      1. Pull the handle behind your back. Three times.
      2. Pull the handle down and across your body below your belt line. Three times.
      3. Without twisting your trunk bring your arm across your chest as far as possible. Three times.
      4. Raise your arm upward and inward approximately 45 degrees above the horizontal. Three times.
      5. Raise your arm directly overhead. Three times.

C. Wand exercise. Three times.
   1. Grasp the wand in both hands with your elbows straight.
   2. Raise your arms overhead and bend the elbows to allow the wand to pass behind your head which is held erect.
   3. Straighten your arms and lower the wand.

D. Overhead pulley exercise. Three times.
   1. Grasp a loop of the rope in each hand and pull down with the good arm as you elevate the operated arm to increase your range of motion.
   2. This apparatus may be used also in correcting a scoliosis.

E. Stall bar exercise. Three times.
   1. Grasp a rung slightly above your head with your hand on your operated side. Allow your body weight to hang on this arm.
   2. Turn your body so that your head passes under and around the arm by which you are hanging.

F. DeLorme weights and Sayre head sling may be used to correct any scoliosis you may be developing. Also, an asymmetrical exercise sometimes used to prevent curvature of the thoracic

spine is to lie on the unoperated side and flex the trunk laterally while the hips and legs are stabilized by the physical therapist. At the end of one to three months, depending upon the rate of your recovery, your physical status will be reviewed by a board of Physical Medicine Rehabilitation personnel. This board is designed to assist you in your continued program of rehabilitation. It must be borne in mind that all treatment as outlined in this preoperative and postoperative procedure is specific for the prevention of unfavorable postural changes and orthopedic malfunctions which might otherwise result if this therapy were not available.

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All requests should be addressed to American Physical Therapy Association, 1790 Broadway, New York 19, N. Y.

Meet Our New Contributors

(Continued from page 243)

It was while Mrs. Holland was a student under a scholarship grant from the National Foundation for Infantile Paralysis that she wrote, "The Role of Physical Therapy in the Rehabilitation of Burned Patients." She received her certificate December 1951.

Mrs. Holland is a member of the American Physical Therapy Association and the American Registry of Physical Therapists.

Joy Benjamin Roy, Psychological Intern at Jewish Sanitarium and Hospital for Chronic Diseases, was graduated from Hunter College in 1950 with a B.A. degree. In 1950 she received her M.S. from City College of New York.

Mrs. Roy held a research fellowship at Vanderbilt University and an internship at Kings Park State Hospital.

At present Mrs. Roy is doing advanced graduate work at New York University.

Editorials

AN EDITORIAL in the February issue of the *Archives of Physical Medicine* is of direct interest to every physical therapist. It concerns the "team" concept in rehabilitation and the problems connected with this concept. Included in this editorial is one statement which we feel requires immediate and analytical comment. In proposing a solution to the problem of providing adequate personnel to staff such a program the following statement appears, "The reasonable answer would appear to be the extension of the training of the corrective therapist to include the other techniques of physical therapy and the *extension of the courses in therapeutic exercise for the physical therapists to cover the endurance and group activities which are necessary in a complete rehabilitation program.*"

The italics in the above quotation are ours since we feel the idea presented to be one of the most serious misconceptions regarding physical therapy education existing today. We believe that we can safely state that for many years the programs in therapeutic exercise in every one of the approved schools has included material on endurance, heavy resistance, and group exercises of sufficient quality to prepare any physical therapist to perform this aspect of treatment. The rationale behind the insistence on and repetition of this idea is not clear, and has led to several major difficulties in the efficient use of properly trained personnel.

One of the problems most frequently discussed is the rising costs of salaries, and the difficulties which arise in providing full rehabilitation facilities in the smaller community. We hear from many sources the complaint that only large, well endowed institutions can afford the "whole team" and that the average hospital and clinic must function with fewer personnel. We believe this to be true, and fail to understand why there is an increasing pressure to subdivide the work. Furthermore, the present concept of rehabilitation in its fullest sense is limited in practice to large facilities. There are relatively few centers which can provide a staff of seven or eight specialists, and a major portion of "rehabilitation" is still being carried on in hospital departments, clinics, schools, and community centers (limited in their size and income), by well-trained and qualified occupational and physical therapists, working under medical direction.

We found the first part of the quotation somewhat puzzling. It proposes to teach "corrective therapists" the technics of physical therapy. What, then, would they be called? Is it not a fact that these persons would then be physical therapists? If this is so, there seems to be little justification for the creation of a new group, or the establishment of new training courses which would only add to the shortages now existing in teaching personnel, space, equipment, and funds.

Perhaps our greatest need at this time is an intelligent evaluation of the potential abilities of our present therapists both by themselves and by the administrators of rehabilitation programs. Such an evaluation, coupled with a critical review of the objectives of treatment in any facility will help, we feel, to provide an efficient, economic answer to many problems of this expanding field of medicine.

Association Activities

The Director Reports:

We have been very pleased with the response of the members individually, and the chapters to the recruitment call. The requests for material have been extremely heavy and we have been behind schedule in getting the requests filled. We can't help but feel that the personal interest and approach is going to pay off. It certainly is resulting in lots more people knowing more about physical therapy.

Student members in Illinois recently distributed, personally, the informational material to libraries in the suburbs of Chicago. They reported that the librarians were most happy to have it and that they had had requests for material but hadn't known where to obtain it. The students at the Medical Auxiliary School, University of Pennsylvania, demonstrated in teams at a High School Career Day at the Graduate Hospital. Other schools have also had student participation at Career Days. The Massachusetts Chapter is asking the students to take material to other local high schools and libraries during spring vacation—to name a few examples of recruitment activities in which the students participated.

Many of the chapters have obtained radio and television time. One chapter, being critical of its own program, recognized that there had been too much professional jargon which would not be understood readily by the listening audience. It is a difficult job to transpose a professional vocabulary into a lay one, but it can be done, and must be done if we are to tell our story. For example, therapeutic exercise to us is a meaningful term and includes all the types of exercise listed in our "Questions and Answers" article, namely:

Assistive, active, resistive and passive movements
Exercise for postural defects
Breathing exercises
Ante and post-partum exercises
Progressive resistance exercises
Progressive relaxation
Stretching
Muscle reeducation
Coordination and rhythm exercise
Exercise by means of mechanical apparatus
Ambulation training with or without braces, crutches, prostheses
Functional training including activities of daily living

Unless this is explained, the term therapeutic means nothing to the layman, and his concept of exercise is that which he does for himself, such as setting-up exercises or an hour in the gym bouncing a medicine ball, etc. We have to use more words and give more examples. Anyway, it's a lot of fun and talents have come to light that we never knew about.

Don't forget Conference. By now you have received your advance registration blank. I am told that there is an excellent Y.W.C.A. in Philadelphia, in case you are interested. So Amiable Readers of the *Philadelphia Gazette*, we hope the Preview of Events to Come will cause you to join the Good Gatherings to be held in the City of Brotherly Love come June 23.

—Mildred Elson
Executive Director

Corrective Therapy for the Handicapped Child

A review of this book appears in the February issue of the *Physical Therapy Review*. A member writes:

"I was indeed interested in seeing the review of *Corrective Therapy for the Handicapped Child* by Stone and Deyton in the February *Review* as I had just finished reading the book. The book in my estimation was poorly written and unsound in many respects, especially from the physical therapy point of view. The chapters on pathological entities in some instances showed how little real understanding the authors had of the diseases and their treatment. This was particularly true in the case of polio.

"Another point with which I was most concerned was the assumption that the corrective therapist was capable of administering therapeutic exercise for involved parts. There was no real line drawn between therapeutics and adaptive physical education.

"This review left entirely the wrong impression of the true value of the book to the physical therapist. I feel that if any book review gives no better evaluation than this one, it should not appear in our magazine."

It is noted that almost half of the review was a listing of the table of contents, and there was one paragraph of general comment on the book.

The editors of the *Review* call attention to the fact that book reviews reflect the reviewer's opinion of a book and not that of the editorial staff or the Association. In order that another point of view may be presented to the readers the following review is reprinted with permission from "The Sight Saving Review for Spring 1952."

Corrective Therapy for the Handicapped Child. *Eleanor B. Stone and John W. Deyton. New York. Prentice-Hall, Inc., 1951. 315 p. Ill.*

Many of those directly concerned with the education of handicapped children have serious reservations about this book.

Those who believe that the physical therapist has an important role to play in the rehabilitation of post-polio cases, cerebral palsy victims, and others with varying orthopedic problems will be confused by the lack of delineation of function between the physical therapist and the corrective therapist or teacher.

Those who are interested in well coordinated school health programs will feel that undue emphasis has been placed on the role of the rehabilitation teacher and that there is too little stress placed on the "team" approach in educating handicapped children.

Those who have had graduate training in any field of special education will not accept at face value such statements as: "These people (corrective physical education therapists) are better equipped to understand the reactions of handicapped children than are other educators," and, "It is through centralization of authority in the corrective specialist, with the deeper pupil-teacher relationships possible, that physical and mental deviations may be more easily detected and treated."

Those who have specialized in guidance and counseling may object to having a corrective physical educator assume primary responsibility for overall guidance of any special group within the school.

Those interested in children with visual difficulties will find no concrete suggestions for individualized programs related to specific defects of the partially seeing. They will question, too, the statement: "All school teachers should watch for signs of difficulty with the eye and if any are noted, should immediately refer the child to the rehabilitation teacher and to the oculist for further advice." Teacher referrals are customarily made directly to the school medical adviser or, if there is none, to the nurse in charge of the health service program of the school. With her knowledge of and constant contact with community agencies and resources she is usually in a much more strategic position to obtain needed corrections and treatment than is the rehabilitation teacher.

The book contains many stereotyped generalizations and needless repetitions. However, one idea or conviction is repeated effectively throughout the text, namely: that all types of physically handicapped children develop to best advantage if and when physical circumstances permit them to attend regular classes with normal children.

Reviewed by MARJORIE A. C. YOUNG, M.Ed., M.P.H., *Consultant in Education, N.S.P.B., and* JOHN TENNY, *General Advisor, Special Education, Wayne University.*

Dear Editor:

I would like to know the opinion of your readers in regard to so-called exercise therapists and corrective therapists employed by the Veterans Administration.

I feel that these people are actually infringing upon the field of the registered physical therapist, and that we as therapists should take a positive stand for or against such people as they are attempting to organize a registry similar to ours. I believe that most of these so-called corrective and exercise therapists are college trained people; however, I do not feel that they are qualified to administer therapeutic exercise unless they have completed an approved course recommended by the American Medical Association.

It seems to me that breaking down the field of physical therapy into various components would be unwise and detrimental to us as physical therapists. Who in our position would want registered mechanotherapists, registered electrotherapists, registered hydrotherapists, etc.? I for one believe that corrective or exercise therapy as such belongs in the field of physical therapy and not as a separate registry.

I would appreciate any ideas that you or your readers may have in regard to this subject.

Sincerely yours,
R. L. S.

Nominations for Association Officers

The Nominations Committee presents the following slate of officers for 1952 elections. Directors to serve four years. All others two years.

FOR PRESIDENT

Harriet Lee—Denver, Colorado—Member of the APTA since 1929. Now Vice-President of the Association and Chief Physical Therapist at Fitzsimons Army Hospital. Major in the Women's Medical Specialist Corps of the United States Army. Member of the Colorado Chapter and one of its former presidents. Major Lee was unanimously elected as Vice-President and was the outstanding choice for President of all who sent suggestions to the Nominations Committee.

FOR VICE-PRESIDENT

Signe Brunnstrom—West Orange, N. J.—Member of the APTA since 1932. Coordinator of Rehabilitation and Director of Professional Education at Kessler Institute, New Jersey. Member of the New Jersey Chapter and formerly Vice-

President of the New York Chapter. Miss Brunnstrom has long been actively interested in the profession, has participated in research and published many articles and training aids.

Mary Nesbitt—Boston, Mass.—Member of the APTA since 1930. Now Speaker of the House of Delegates and Chief Physical Therapist at Massachusetts General Hospital, Boston. Member of the Massachusetts Chapter and formerly Chapter Vice-President. She served as National Chairman of the Education Committee. A member who suggested Miss Nesbitt as a candidate wrote, "She is loyal, sincere and an untiring worker. As Speaker of the House of Delegates she has experience that will be an asset to her candidacy as Vice-President and thus an asset to have her continue on the Executive Committee."

FOR SECRETARY

Edna Blumenthal—Durham, North Carolina—Member of the APTA since 1931 and a member of the present Nominations Committee. Director of Rehabilitation of the North Carolina Cerebral Palsy Hospital. President of the North Carolina Chapter. Miss Blumenthal has had extensive civilian and military experience as a physical therapist and is vitally concerned with the projects of the Association.

Dorothy Voss—Vallejo, California—Member of the APTA since 1939 and present Chairman of the Public Relations Committee. Formerly Chief Physical Therapist at George Washington University Hospital; now at Kabat-Kaiser Institute, Vallejo, California. Retiring President of the District of Columbia Chapter. Miss Voss has made a definite contribution to Association development through her Committee work.

FOR TREASURER

R. Lewis Brown—Pittsburgh, Pennsylvania—Member since 1940. Chief Physical Therapist Mercy Hospital, Pittsburgh. President of the Western Pennsylvania Chapter. A Chapter writes of Mr. Brown, "He has shown a real interest in the administrative duties of the Association for several years."

Sarah Rogers—New Orleans, Louisiana—Member since 1944. Newly appointed Technical Director of the Charity Hospital School of Physical Therapy, New Orleans. Formerly Technical Director Children's Hospital School of Physical Therapy, Los Angeles. Former President Southern California Chapter. Those who know Miss Rogers testify that she is an accomplished administrator and executive.

FOR SPEAKER OF THE HOUSE OF DELEGATES

Jane Carlin—Philadelphia, Pennsylvania—Member since 1942. Associate Professor, University of Pennsylvania School of Medical Auxiliary Services. Editor in Chief of the Physical Therapy Review, Educational Consultant APTA 1949-1950, Member Pennsylvania Chapter and former Chapter President. The Chapter states that she has fine qualities of leadership, administration, and executive ability. "She is a very dependable person and capable of handling any assignment which is given to her."

Mary Lawrence—Battle Creek, Michigan—Member since 1940. Member of the Nominations Committee, Chairman, Education Committee, 1946-47, Physical Therapist at Percy Jones Army Hospital and a Captain in the Women's Medical Specialist Corps of the United States Army. Formerly Technical Director School of Physical Therapy, University of Colorado Medical Center. Member of the Michigan Chapter and formerly Chief Delegate of the Colorado Chapter. The Chapter states that she is an able, charming and well informed executive who could capably preside at Association meetings.

FOR DIRECTOR (two to be elected)

Clara Arrington—Washington, D. C.—Member since 1931. Physical Therapy Consultant to the Children's Bureau, Federal Security Agency. Former Member of the National Inter-Professional Relations Committee. Member District of Columbia Chapter. Miss Arrington's official position requires that she travel about the country and she is otherwise in touch with all phases of the profession.

Dorothy Fredrickson—Nashville, Tenn.—Member since 1931. Chief Physical Therapist Vanderbilt University Hospital. Formerly APTA Vice-President and President Massachusetts Chapter. Member of the Tennessee Chapter and Co-Chairman Chapter Legislation Committee. Prior to going to Vanderbilt, Miss Fredrickson was Assistant to Janet Merrill at Children's Hospital in Boston and has been closely allied with the development of our profession.

Mary Clyde Singleton—Durham, N. C.—Member since 1934. Clinical Supervisor Duke University School of Physical Therapy. President APTA. Formerly Speaker of the House of Delegates. Member North Carolina Chapter, and former President Carolina Chapters. A chapter states, "Her excellent administrative capacity that was demonstrated in the office of Speaker of the House and now in the office of President qualifies her most assuredly for the office of Director."

Margery Wagner—Oakland, California—Member since 1938. Technical Director School of Physical Therapy University of California. Formerly Speaker of the House of Delegates. Member of the Northern California Chapter and past President. From a chapter suggestion, "She has the experience to enable her to fulfill this office. She is well acquainted with national and chapter policies. We feel her abilities are self-evident."

FOR NOMINATIONS COMMITTEE
(two to be elected)

Dorothy Baethke—Philadelphia, Pennsylvania—Member since 1928. Professor Physical Therapy Division School of Medical Auxiliary Services, University of Pennsylvania, Chairman School Section. Formerly Director and National Chairman Education Committee. Member and Director of Pennsylvania Chapter. Past President, Minnesota Chapter. Miss Baethke has been a regular attendant at National Conferences and has participated actively in National and Chapter activities since she became a member.

Louise Bailey—Chicago, Illinois—Member since 1937. Physical Therapy Consultant National Society for Crippled Children and Adults, Inc. Director APTA. Member Illinois Chapter. Formerly President Hawaii Chapter. Miss Bailey's contacts with physical therapists throughout the country, her experience on the Executive Committee and her independent thinking qualify her to participate in the selection of candidates for office.

Susan Roen—Los Angeles, California—Member since 1929. Chief Physical Therapist Los Angeles Orthopedic Hospital. Director APTA and past President. Member Southern California Chapter and former Chapter Treasurer. From a chapter, "She knows many of the members and the abilities of these members, is vitally interested in the progress of physical therapy and of the American Physical Therapy Association."

Beatrice Schulz—St. Louis, Missouri—Member since 1942. Technical Director School of Physical Therapy, Washington University Medical School. Member National Exhibits Committee. Past Vice-Chairman School Section. Member Eastern Missouri Chapter and former Chapter President. A chapter's reference, "Her extensive experience as a local and state officer along with that of Chief Delegate, makes for knowledge of the requirements of various offices."

State Registration of Physical Therapists

Fifteen states plus the Territory of Hawaii now have legislation regarding registration for physical therapists. Practice without registration is prohibited by law (mandatory) in Arizona, Maryland, New Mexico, New York and Pennsylvania. In all other states use of the title Registered Physical Therapist or similar designations is forbidden to those who are not registered in the state (permissive). For the information of our members we have abstracted pertinent sections of each law.

In addition to those listed, similar legislation is known to be under active consideration in the following states: California, District of Columbia, Kentucky, New Jersey, Tennessee, Wisconsin. It is probable that within the coming year many other states will follow suit.

ARIZONA—An Act "Relating to Professional and Business Pursuits; Creating the Board of Physical Therapy Examiners, Prescribing Its Powers and Duties; Prescribing Examination and License to Practice Physical Therapy; Providing for Revocation or Suspension of Licenses; Providing for Reciprocity Certificates and Certificates to Present Practitioners; Prescribing Fees for Licenses; and Prescribing Penalties." Signed March 12, 1952.

A person desiring to engage in the practice of physical therapy must have a certificate of registration as a physical therapist issued by the Board of Physical Therapy Examiners (three members who meet the requirements of the American Medical Association, reside in the state and are registered or eligible for registration under the provisions of this Act). It is unlawful to practice without a certificate. Those registered in a registry approved by the American Medical Association who are actively engaged as physical therapists in this state on the effective date of this Act who have been so engaged for a period of not less than three years immediately preceding the effective date of this Act and apply for registration within 90 days of the effective date may be issued certificates without examination on application and the payment of $5.00.

The board may in its discretion issue a license to applicants who have completed a course in physical therapy approved by the board; are over 21 years of age and of good moral character; reside in the state of Arizona; have been actively engaged in the practice of physical therapy for three years prior to the effective date, apply within 90 days of the effective date and pay the fee required. All others must apply for examination (application fee $5.00, examination fee $25.00) and must have satisfactorily completed a course in physical therapy approved by the American Medical Association. Examinations will be held by the board during the month of April and September.

Certificate of registration must be recorded in the office of the county recorder of the county in which the registrant resides. Those registered must not practice independent of the prescription, direction or supervision of a licensed physician or surgeon. Certificates of registration are for three years and must be renewed for additional three year periods at a fee of $5.00.

Reciprocity is provided for those registered in a state or territory having standards at least equal to those in this Act and which grant a similar privilege to those registered under the laws of this state. Fee $5.00.

Address: The Board of Physical Therapy Examiners
Phoenix, Arizona

CONNECTICUT—"Chapter 311—Physiotherapy Technicians."

Registration by endorsement (without examination) may be granted to residents or those intending to become residents who are graduates of approved schools. Fee $10.00. State Board of Examiners for Physiotherapy Technicians consists of five physicians.

Annual renewal of certificate is required during the month of January at a cost of $2.00.

Reciprocity is provided for those registered in other states. The law does not prohibit practice by others but forbids any implication that the individual is licensed to practice in the state.

It is anticipated that this law will be amended in the near future.

Address: Nila K. Covalt, M.D.
Secretary-Treasurer, Board of Examiners for Physiotherapy Technicians
Hospital for Chronic Illness
Rocky Hill, Connecticut

FLORIDA—"Physical Therapists Practice Act" filed June 11, 1951.

Graduates of approved schools, who are U.S. citizens, may apply to the Board (Board of Examiners in the Basic Sciences and the State Board of Medical Examiners who employ three registered physical therapists to aid in examinations) for applications for Registration. The application fee is $25.00. Examinations are held the first Tuesday in May and the first Tuesday in November in Tallahassee.

Examinations include written and oral tests and practical demonstrations. Applicants are first required to obtain certificates of proficiency in basic science by passing an examination in the basic sciences of anatomy, physiology, and pathology as they apply to physical therapy.

Only those who are registered in Florida may use RPT or similar designations. Those so registered must practice only under the prescription, direction and supervision of a person licensed by the State of Florida to practice medicine. Registered Physical Therapists must register every year with the State Board of Health and pay a fee of one dollar.

Reciprocity is not provided.

Address: Homer L. Pearson, M.D., Secretary
State Board of Medical Examiners
701 du Pont Building
Miami, Florida

GEORGIA—"Physical Therapists Practice Act" approved February 19, 1951.

Registrants of the American Registry of Physical Therapists may be registered without examination at the discretion of the State Board of Medical Examiners by filing application and paying a fee of $5.00. Other graduates of approved schools must apply to the board, pay $25.00 and take an examination. Three registered physical therapists are to be employed to aid in such examinations which include practical demonstrations and written or oral tests of the applicant's fitness. Registration must be renewed during January of every third year at a fee of $5.00.

Those who practice independently of the prescription, direction or supervision of a person licensed in Georgia to practice medicine and surgery without limitations, may have their registration revoked.

Only those registered under this Act may imply that they are registered physical therapists.

Reciprocity is provided for physical therapists registered by other states having substantially equal requirements and according a similar privilege.

Address: Mr. R. C. Coleman, Joint Secretary
State Examining Board
State Capitol
Atlanta, Georgia

ILLINOIS—"Illinois Physical Therapy Registration Act" approved August 3, 1951.

One desiring a certificate of registration as a physical therapist must be either a citizen of the U. S. or have made declaration of intention to become a citizen, and having made such declaration of intention have filed a petition for naturalization within thirty days after becoming eligible to do so.

Educational and Professional Requirements:

(1) Has graduated from a high school or secondary school approved by the Department; and

(2) Has: (a) completed at least sixty semester hours of work including satisfactory courses in biology and the physical sciences in a college or university approved by the Department; or (b) Graduated from a school of physical education approved by the Department; or (c) Graduated from a school of nursing approved by the Department; and

(3) Has completed to the satisfaction of the Department an approved course in physical therapy given in a school of physical therapy approved by the Department, such school being established in a medical school, hospital, college or university approved by the Department, which course shall embrace the following:

The Department means the Department of Registration and Education. Applicants must apply to the Department for Registration, pass an examination which embraces such subjects taught in approved schools of physical therapy and includes practical demonstrations and written and oral tests. The fee for examination is $10.00. The Board of Physical Therapist examiners is composed of three registered physical therapists and two licensed physicians.

Certificates must be renewed annually (in July) at a fee of $2.00. Practice independent of the prescription, direction and supervision of a person licensed to practice medicine in all of its branches or any system or method of treating human ailments without the use of drugs or without operative surgery is punishable by fine.

Reciprocity at the fee of $10.00, is provided at the discretion of the Department to those registered under other states, territories, provinces of Canada, where the requirements, are substantially equal.

Address: Director, Department of Registration and Education of the State of Illinois
State House
Springfield, Illinois

SUBJECTS	*Min. Clock Hrs. of Theory*	*Min. Clock Hrs. of Practice*	*Min. Clock Hrs. of Theo. & Prac.*	*Qualif. of Instruct.*
1. Applied Sciences				
Anatomy			210	Physician instructor or other qualified in specialty
Pathology	30			
Physiology	30	45		
Psychology	15			
2. Procedures				
Electrotherapy	25	40		Physician or qualified physical therapist
Radiation Therapy	5	5		
Hydrotherapy	5	15		
Massage	10	45		
Therapeutic Exercise	30	75		
3. Physical Therapy as applied to:				
Medicine	15	30		Physician for theory and a qualified physical therapist for practice
Neurology	10	15		
Orthopedics	15	30		
Surgery	15	30		
4. Ethics and Administration	5			Qualified physical therapist
5. Clinic practice			400	Physician and qualified physical therapist
6. Electives			50	Physician or other instructor qualified in the specialty

MARYLAND—Chapter 906, Article 43 of the Annotated Code of Maryland, Title: "Health"—Sub-title: "Physical Therapy." Approved May 7, 1947. Amendment approved April 29, 1949.

Physical Therapists may make application for license to the Maryland State Board of Physical Therapy Examiners if they have graduated from a school of physical therapy accredited by that Board. The application fee is $10.00. Only those licensed may be known as physical therapists. No one may practice physical therapy in Maryland unless he is licensed. Those licensed must treat only patients diagnosed and referred by licensed medical doctors.

Reciprocity is provided for those licensed or registered in another state having requirements approved by the Maryland Board of Physical Therapy Examiners.

Annual renewal upon payment of renewal fee of $5.00. Any licensee who fails to make application for renewal of his or her license within three months of its expiration, accompanied by the required renewal fee, shall be refused a renewal until he or she shall have successfully passed the examination and paid the $10.00 fee.

Address: State Board of Physical Therapy Examiners
2411 No. Charles St.
Baltimore 18, Md.

MASSACHUSETTS—"Registered Physical Therapists Law," approved August 30, 1951.

Those desiring to be registered as physical therapists should apply to the Board of Registration in Medicine. They must be graduates of schools of physical therapy approved for training physical therapists by the appropriate subbody of the American Medical Association or if prior to 1936, the American Physical Therapy Association and pass an examination. The application fee is $25.00. The Board is to employ three registered physical therapists to aid it in examinations, the type of which shall be determined by the Board.

Registered Physical Therapists may not practice independent of the prescription, direction or supervision of a person licensed in Massachusetts to practice medicine and surgery without limitation.

Registration must be renewed every third year at a fee of $5.00. Those not registered may not imply that they are.

Reciprocity is provided without examination for those registered in other states having substantially equal requirements, upon payment of application fee of $10.00.

Address: Dr. Robert Cochrane, Sec.
Massachusetts Board of Registration in Medicine
Room 37
State House
Boston 33, Massachusetts

MINNESOTA—Sessions Laws, Chapter 479—H.F. No. 1585, Approved April 18, 1951.

The State Board of Medical Examiners will register as physical therapists those graduates of schools approved by the Board who pay a fee of $15.00, apply for and pass an examination.

The Examining Committee is composed of three physical therapists, one licensed and registered doctor of medicine in the general practice of medicine, and one professor or associate or assistant professor from a course in physical therapy accredited by the Board.

The Board may register without examination those who present satisfactory evidence of having passed the examination of the American Registry of Physical Therapists and pay $15.00.

Registration must be renewed annually in January with a payment of $3.00. Registered physical therapists may not practice independent of the prescription and direct supervision of a person licensed and registered in Minnesota to practice medicine and surgery.

Those not registered, may not represent themselves to be physical therapists.

Reciprocity is provided for those who have been registered by examination in states having standards as high as this state.

Address: Minnesota Board of Medical Examiners
230 Medical Arts Building
St. Paul 2, Minn.

NEW HAMPSHIRE—"Physical Therapy Practice Act," Approved March 20, 1951.

Registrants of the American Registry of Physical Therapists may be registered by the Board of Registration in Medicine without examination on application and payment of $5.00. Others must have completed an approved course in physical therapy in a school maintaining at that time a standard satisfactory to the Board, pass an examination and pay a fee of $5.00.

Two registered physical therapists are to be employed to aid in examinations. Registration must be renewed annually on or before December 31st at a fee of $1.00.

Practice independent of the prescription, direction or supervision of those licensed in this state to practice medicine and surgery is forbidden.

Those not registered may not represent themselves to be so.

Reciprocity is provided. Those registered in states whose requirements the Board deems equal to those of this state may be registered without examination on application and payment of the required fee of $5.00.

Address: J. S. Wheeler, M.D., Secretary
State Board of Reg. in Medicine
Concord, N. H.

NEW MEXICO

Members in good standing of the American Physical Therapy Association or the American Registry of Physical Therapists, or both, who are residents of the State of New Mexico, may be registered upon application and payment of a fee of $10.00.

Only those who have received a certificate of registration and license from the Secretary of the Board of Basic Sciences of the State of New Mexico, may practice physical therapy or indicate that they are registered, licensed or qualified physical therapists.

Renewal not required at present.

Reciprocity not provided.

Note: As of March 1st no official ruling had been made on this law by the Attorney General.

Address: No permanent appointment as yet. Correspondence is answered by chapter secretary.
Mrs. Hilda Voetberg
58 South Federal Place
Santa Fe, New Mexico

NEW YORK—"Education Law, Article 131, Medicine; Osteopathy; Physiotherapy."

No person shall practice physiotherapy unless licensed by the department and registered as required by the article.

Physical therapist applicants for licensing and registration are required to have four academic years post secondary school training including graduation from a school of physiotherapy approved by the state education department.

Those who cannot qualify regarding specific education requirements may apply to the Board of Regents for special permission to take the examination under Section 211 of the Education Law.

Examination is required. The fee is $30.00 which includes first registration fee.

Examination is by the State Board of Medical Examiners and includes written and oral-practical tests (sometimes oral only, sometimes oral-practical, depending on examiner). They are usually given three times a year (October, February, June).

Renewal is required biennially. Re-registration fee is $2.00.

Reciprocity is not provided.

Further amendments to this law are still under consideration.

Address: Mr. Robert C. Killough, Ass't Commissioner for Professional Education
State Education Department
23 South Pearl Street
Albany 7, N. Y.

NORTH CAROLINA—"Physical Therapists Practice Act," passed April 14, 1951.

A person who desires to be registered must be a graduate of a school of physical therapy approved by the appropriate subbody of the American Medical Association or if prior to 1936, by the American Physical Therapy Association. He must apply to the examining committee (four physical therapists, one doctor), pay $25.00 and successfully pass an examination. Registration must be renewed annually during January on payment of $5.00. Registered physical therapists may not practice independent of the prescription, direction and supervision of a person licensed in this state to practice medicine and surgery.

Those not registered may not represent themselves to be physical therapists. Reciprocity without examination is provided for those registered under the laws of another state if requirements are substantially equal, and the state accords a similar privilege. The application fee is $25.00.

Address: Maria M. Kennedy, Secretary
State Examining Committee of Physical Therapists
123 West 7th Street
Charlotte, N. C.

PENNSYLVANIA

Admission to the practice of physiotherapy in the State of Pennsylvania is granted by the State Board of Medical Education and Licensure by the issuance of a license to the candidate who passes the licensing examination and satisfies all other legal requirements. The Board will accept for admission to the examinations, graduates from physiotherapy schools approved by the Council on Medical Education and Hospitals of the American Medical Association providing the credentials of the applicant meet the other requirements of the Board (four year high school course, completion of professional course, 21 years of age, good moral character, not addicted to the use of alcohol or narcotic drugs).

The fee is $25.00. Examinations are held during the month of July in Philadelphia and Pittsburgh and during the month of January in Philadelphia. Practice must be upon the direction of a physician or other person authorized by law to order physiotherapy.

Renewal annually—before December 31st of each year. Fee $1.00. Reciprocity. Pennsylvania does not reciprocate with any of the states in the matter of physiotherapy licensure.

Address: Mrs. Marguerite Glass Stiener, Executive Secretary
Board of Medical Education and Licensure
Commonwealth of Pennsylvania
Harrisburg, Pa.

SOUTH CAROLINA—"The Physical Therapists Practice Act," approved February 29, 1952.

To be eligible for registration by the board as a physical therapist each applicant must meet the following professional requirement: Be a graduate of a school of physical therapy approved by the appropriate subbody of the American Medical Association if such school existed at the time of his graduation; or if graduated prior to 1936, then the school or course which was approved by the American Physical Therapy Association at the time of his graduation.

The board shall register as a physical therapist any person who (1) applies for such registration on or before October 1, 1952, and (2) at the time of the passage and approval of this act is a member of or is eligible for membership in the American Physical Therapy Association and/or the American Registry of Physical Therapists; and (3) is residing in the state at the time of the passage of this act. At the time of making such application, such applicant shall pay the board a fee of five dollars.

After October 1, 1952, examination is required. The State Board of Examination and Registration of Physical Therapists will consist of at least three and not more than five members nominated by the South Carolina Physical Therapy Association, Inc., and approved by the governor and registered under their act. Examination will be held at least once a year. The fee is $10.00.

Registered physical therapists must apply for extension of registration annually and pay a fee of $2.00. Reciprocity is provided in payment of a fee of $10.00 for physical therapists registered in states or territories where the requirements are substantially equal if the state accords a similar privilege to this state.

Any person not registered may not call himself a physical therapist or indicate by any other words, letters, or insignia that he is a registered physical therapist. Those who are registered may not treat human ailments except under the direction, supervision and prescription of a person licensed to practice medicine or surgery.

Address: State Board of Examination and Registration of Physical Therapists
Columbia, South Carolina

WASHINGTON—"Physical Therapists Practice Act." Approved by the Governor, March 22, 1949.

Graduates of schools of physical therapy approved for training physical therapists by the appropriate subbody of the American Medical Association or prior to 1936, by the American Physical Therapy Association, may apply for examination for registration as physical therapists by the Examining Committee of Physical Therapists (at least 3 physical therapists). The fee is $25.00.

Those registered may not practice except under the prescription, supervision and direction of a person licensed in this state to practice medicine and surgery. Those not registered may not represent themselves to be.

Registration must be renewed during the month of January every third year and the fee is $5.00.

Reciprocity is provided for those registered under the laws of other states if requirements are substantially equal. The fee is $25.00.

Address: Mr. Edward C. Dohm
Professional Division
Department of Licenses
Olympia, Washington
or
Miss Gudrun Tandberg, R.P.T.
Chairman of Examining Comm.
8623—41 S.W.
Seattle 6, Washington

TERRITORY OF HAWAII—Chapter 19, "Physiotherapists or Physical Therapists" Approved April 28, 1945.

No person shall designate himself as a physical therapist except under a valid and effective permit issued by the Board of Health of the Territory of Hawaii. Permits are issued to those who have graduated from schools of physical therapy approved by the Council on Medical Education and Hospitals of the American Medical Association, are members in good standing of the American Physical Therapy Association, the American Registry of Physical Therapist or the Chartered Society of Physiotherapists. Physical examinations are required. There is no registration fee.

Permittees may not practice except under the supervision of or on referral from a duly licensed physician in the Territory.

Permits must be renewed annually and X-ray examinations of the chest must be obtained.

Address: Dr. Charles L. Wilbar, Jr., President
Department of Health
Honolulu 1, Hawaii

Revision of Code of Ethics and Bylaw Amendments

Several changes in the Code of Ethics will be voted on at the House of Delegates meeting in Philadelphia and the following amendments to the bylaws will be proposed. Italicized words or phrases indicate specific changes.

To amend Article III, Section 3 (a) to read—who has been such for *twenty* or more years.

To amend Article III, Section 4 to read—except the right to vote, to hold office, to serve on standing committees *or to imply by any means that he is an active member.*

To amend Article III, Section 5 to insert (a) *If he complies fully with the Code of Ethics of this Association.*

To amend Article III, Section 7 to provide for restoral to *Inactive* membership.

To amend Article IV, Section 4 (c) (4) to delete *unless it sees fit.*

To amend Article IV, Section 4 (d) to read—A component chapter *shall* expel, etc., and to omit in the Chapter's *Constitution.*

To amend Article VI, Section 5 to provide for a House of Delegates vote by mail when this is deemed necessary.

To amend Article X, Section 6 to add recruitment of physical therapy students as a duty of the Education Committee.

To amend Article X, Sections 7 & 8 to combine the duties of the Public Relations and Inter-Professional Relations Committees and to name this the Relations Committee.

To amend Article X, Section 13 to provide that three members of the Nominations Committee shall be elected by the House of Delegates.

Chapter Activities

Arizona

Governor Pyle signed the bill to register physical therapists in Arizona on March 12th. Thus Arizona becomes the fifteenth state to provide legal recognition of physical therapists.

California

A joint meeting of all California Chapters was held in Los Angeles on March 8 in the Los Angeles County General Hospital.

Northern California

The Chapter will show an Association exhibit at the annual meeting of the Association of Western Hospitals, May 12-15. During this meeting a joint occupational therapy and physical therapy luncheon meeting is planned for hospital administrators.

The chapter has developed a most effective triple panel exhibit entitled, "Physical Therapy in Postsurgical Care." Each panel is devoted to a specific condition and contains photographs with a description of physical therapy procedures used in that particular case. The following are portrayed:

Cuff resection of the ulna for a malunited Colles fracture;

Limited shoulder motion following a radical mastectomy;

Fractured femur with intramedullary pin.

Southern California

The Southern California Chapter was responsible for the Association exhibit, "Physical Therapists, Their Job and Their Distribution," which was shown in Los Angeles at the National Convention of the Counsel of Guidance and Personnel Associations, Inc., March 21 through April 3. Exhibit space was shared with the American Diabetic Association and the American Occupational Therapy Association in the interest of joint recruitment.

Representatives of the Chapter participated in the annual meeting of the American Association for Health, Physical Education and Recreation in Los Angeles during the week of April 7.

South Carolina

A bill to register physical therapists in South Carolina became law when it was signed by Governor Byrnes on February 29. Members of the South Caro'ina Chapter, which was formed as a separate entity only in December, worked unceasingly to obtain this legislation, and are proud of the record time in which it was accomplished. The first reading of the bill was January 22.

Missouri

The Missouri Physical Therapy Association, Inc. is made up of the Eastern Missouri and Western Missouri Chapters. The following program was held in St. Louis, March 30 and 31, concurrently with the Missouri State Medical Association.

Alex Harell, M.D., Phantom Limb Pain
Thomas Thale, M.D., Physical Therapy and Depth Psychology
Edward C. Holscher, M.D., Fitting the Prosthesis—Lower Extremity Amputee
Training of the Lower Extremity Amputee, Speaker-Demonstrator
Paul J. Zentay, M.D., Etiology and Clinical Manifestations of Cerebral Palsy
D. Elliott O'Reilly, M.D., Bracing for Spastic Conditions
Ray H. Trlica, Rehabilitation of the Paraplegic, Demonstration
Paul O. Hagemann, M.D., Arthritis: Medications and Their Effects
Sedgwick Mead, M.D., Physical Agents in the Treatment of Arthritis

Eastern Missouri

The Chapter held a well attended Neuro-Anatomy Institute which was open also to occupational therapists.

All Roads Lead to—

Philadelphia via US 309 from the North

Follow 309 to Germantown Ave. Left on Germantown Ave. to Allens Lane. Right on Allens Lane to Lincoln Drive, left on Lincoln Drive. Follow Lincoln Drive to Wissahickon Drive, continue on Wissahickon Drive to East River Drive (this actually is one continuous drive), East River Drive to Benjamin Franklin Parkway. Around City Hall to Broad St., South on Broad to Bellevue.

Philadelphia on US 611 from the North

Follow 611 (which is Old York Road in Philadelphia) to Broad Street. South on Broad Street to Bellevue-Stratford.

Philadelphia from New York on US 1

Follow US 1 (Roosevelt Blvd.) in Philadelphia to Broad Street, left on Broad Street to Bellevue-Stratford Hotel.

Philadelphia from New York via New Jersey Turnpike

Follow turnpike to Camden-Philadelphia (Route S41) Interchange, turn right on S41 to Tacony-Palmyra Bridge, leaving bridge follow Levick Street to Roosevelt Blvd. Left on Blvd. to Broad St., left on Broad Street to Bellevue-Stratford.

Philadelphia via Pennsylvania Turnpike

Follow turnpike to Schuylkill Expressway—Expressway to Gulph Mills, turn right on Route 23, follow to 23A, follow Rt. 23A to Spring Mill Road. Right on Lancaster Pike (US 30). Left on US 30 (Lancaster Pike) to 63rd St. in Philadelphia. Right on 63rd St. and then south to Chestnut St. Left on Chestnut to Broad St. Right on Broad St. to Bellevue-Stratford.

Philadelphia City Hall from the Benjamin Franklin Parkway.
Courtesy of the Chamber of Commerce

Philadelphia on West Chester Pike (State Route 3)

Follow State Route 3 to 63rd St. and Market Sts. Right on 63rd to Chestnut St. Left on Chestnut St. to Broad St. South on Broad St. to Bellevue-Stratford.

Philadelphia from South on US 13

Follow US 13 to Darby, from Darby follow Woodland Ave. to Chestnut St. in Philadelphia. Right on Chestnut St. to Broad St. South on Broad to Bellevue-Stratford.

Philadelphia from South on US 1

Follow US 1 to Baltimore Ave. in Philadelphia. Follow Baltimore Ave. to Woodland Ave. Left on Woodland to Chestnut St. Right on Chestnut St. to Broad St. Right on Broad St. to Bellevue-Stratford.

Courtesy of the Automobile Club of Philadelphia

Exhibits

This year exhibits are under the management of Gordon M. Marshall of Chicago, advertising agent for the *Review*. They will include, as in former years, technical, chapter and educational exhibits. A large number are anticipated which will be of great interest, and will merit spending considerable time in the exhibit area.

Conference 1952

Ye Bellevue-Stratford
Philadelphia, Pennsylvania
June 23—28, 1952

Facts about the Conference

Rates (Daily)

COURT

Single room and bath, $5.50, $6.50.
Double room, double bed and bath, $8.00, $9.00, $10.00.
Double room, twin beds and bath, $10.00.

OUTSIDE

Single room and bath, $7.50, $9.00, $10.00, $11.00.
Double room, double bed and bath, $10.50.
Double room, twin beds and bath, $10.50, $12.00, $13.00, $14.00.
Combination of two rooms with one connecting bath, in court location: (One room with two twin studio beds; other room with one double bed). For two persons, $11.50; three persons, $14.50; four persons, $16.00.
Suite (parlor, double bedroom, twin beds and bath): $20.00, $25.00, $30.00.
Single room, running water, $4.50.
Double room, running water, $6.00.

Reservations

A blank appears in this issue (page 279) of the *Review*. All reservations for hotel space should be made with the hotel.
A roommate should be selected if possible. The number of singles in any hotel is limited.

Registration

Active and Inactive Members—$5.00
Student Members—$2.00
Physicians, occupational therapists, nurses and qualified physical therapists from other countries—no fee.
Professional membership card required. Physical therapists licensed in the state of Pennsylvania, but not members of the Association—$15.00
Licensure card required.
Advance registration cards will be sent out with the dues notices. If registration is not done in advance your membership card will be required for registration.

Instructional Courses

On Friday and Saturday, June 27 and 28, the following four instructional courses will be offered to members only. Tuition, if registered at the conference—$5.00. Instructional course alone—$10.00.

Electrical Evaluation
Attendance limited to 50

The course will include lecture, demonstration and practice in Erb's, chronaxie, Golseth, Fizzell Testing. Instructors, Mary Elizabeth Kolb, Evelyn MacDonald, Beryl Baumgartner. Electromyography—Herbert Shapiro, Ph.D., University of Pennsylvania.

Reflex Pattern of Movement
Attendance limited to 64

Margaret Knott and staff members from the Kabat-Kaiser Institutes, instructors. This will be a practical technic course. Slacks or shorts will be needed.

Analysis of Gait
Attendance limited to 50

The course will include discussion of normal locomotion, fundamental studies on human locomotion, with movies or lecture—patient demonstration. Signe Brunnstrom and others.

Functional Anatomy
Attendance limited to 75

Oscar V. Batson, M.D., Chairman, Department of Anatomy, and Professor of Anatomy, Graduate School of Medicine. Lecture and demonstrations.

Business Meetings and Program Schedule

Wednesday, June 18th **Thursday, June 19th** **Friday, June 20th**	Executive Committee Meetings
Saturday, June 21st All day	School Section
Sunday, June 22nd 2:00 to 5:00 p.m.	House of Delegates
Monday, June 23rd All day	House of Delegates
4:00 to 6:00 p.m.	"Mug-up"—Pennsylvania Chapter, Hostess
8:00 p.m.	**Opening Session—Physical Therapy Education: Its Relation to a Changing Emphasis in Medical Care** Mr. Basil O'Connor, Moderator Participants: Robert Bennett, M.D.; Howard A. Rusk, M.D.; Thomas P. Murdock, M.D.; Carlyle Jacobsen, Ph.D.; Jessie Wright, M.D.
Tuesday, June 24th	**Symposium on Hand Injuries:** Medical Officers and Physical Medicine Staff of Valley Forge Army Hospital, Phoenixville, Pa.
9:30 to 9:40 a.m.	Introduction—Lt. Col. Richard H. B. Dear, M.C., Chief, Physical Medicine Service
9:40 to 10:20 a.m.	Dynamic Anatomy of the Hand Lt. Col. Victor B. Vare, M.C., Chief Orthopedic Section, Surgical Services. (Illustrated with 35 mm color slides)
10:30 to 11:20 a.m.	Architectural Principles in the Reconstruction of Injured Hands 1st Lt. Erle E. Peacock, M.C., Hand Surgery Subsection, Orthopedic Section, Surgical Service. (Illustrated with 35 mm color slides)
11:20 to 11:45 a.m.	Physical Medicine in the Care and Treatment of Hand Injuries 1. Physical Therapy—Capt. Martha M. Boger, WMSC (PT) Physical Therapy Staff 2. Occupational Therapy—1st Lt. Janet L. Werner, WMSC (OT) Occupational Therapy Staff 3. Summary and Conclusion—Lt. Col. Edward B. Shires, M.C., Asst. Chief, Physical Medicine Service
11:45 to 12:00 noon	Discussion Period
2:00 to 5:00 p.m.	**Symposium on Posture and Body Mechanics in Relation to Growth and Development** Moderator: Jessie Wright, M.D. Chairman: Kathryn Kelley
2:00 to 2:15 p.m.	Importance of Growth and Development in Clinical Problems Jessie Wright, M.D.
2:15 to 2:30 p.m.	Dr. Arnold Gesell's Film—Growth and Development (Activities of the Baby)
2:30 to 2:45 p.m.	Posture and Body Mechanics in the Preschool Child Margaret Winters
2:45 to 3:00 p.m.	Recess for Relaxation and Refreshment by Stretching, followed by a Rhythmic Saunter through the Exhibits
3:00 to 3:15 p.m.	Primary School Stature and Habit Patterns John Allen, M.D.
3:15 to 3:30 p.m.	Adolescent Problems Related to Growth Factors Mary Elizabeth Kolb
3:30 to 3:45 p.m.	The Influence of Growth Factors and Body Mechanics as Reflected in the Adult Lt. Col. Audrey Underkofler, WMSC, U.S.A.F.
	Stand and Stretch but Stay
3:45 to 4:00 p.m.	Discussion opened by Constance Greene
4:00 p.m.	Film
2:00 to 5:00 p.m.	**Symposium on Industrial Accident Disabilities** Moderator: William A. Tomasco, M.D.
2:00 to 2:15 p.m.	Introduction of Symposium—William A. Tomasco, M.D.
2:15 to 2:50 p.m.	The Management of Burns with Special Reference to Rehabilitation Jonathan E. Rhoads, M.D.
2:50 to 3:25 p.m.	The Conservative Treatment of Rotator Cuff Injuries Harold Lefkoe, M.D.

3:25 to 3:45 p.m.	Visit Exhibits
3:45 to 4:20 p.m.	To be announced
4:20 to 4:45 p.m.	Discussion: William A. Tomasco, M.D.
7:30 p.m.	Movies
Wednesday, June 25th	
9:30 to 12:00 noon	**Symposium on Neurological Conditions** Moderator: Joseph C. Yaskin, M.D.
9:30 to 9:45 a.m.	Introduction—Joseph C. Yaskin, M.D.
9:45 to 10:20 a.m.	Rationale of Physical Medicine in Postoperative Management of Disc Patients Robert A. Groff, M.D.
10:20 to 10:50 a.m.	Multiple Sclerosis Robert L. Leopold, M.D.
10:50 to 11:10 a.m.	Visit exhibits
11:10 to 11:45 a.m.	Title to be announced Donald A. Dupler, M.D.
11:45 to 12:00 noon	Discussion led by Joseph C. Yaskin, M.D.
9:30 to 12:00 noon	**Electrotherapy—Panel Discussion** George Morris Piersol, M.D. Other participants to be announced
12:00 to 3:00 p.m.	Executive Committee and Advisory Council Meeting
3:00 to 5:00 p.m.	**Standing Committee Meetings** Chapter Chairmen and National Chairmen
6:00 to 7:15 p.m.	Reception for Outgoing and Incoming Presidents of the American Physical Therapy Association and the Pennsylvania Physical Therapy Association, Inc.
7:30 p.m.	Annual Banquet
Thursday, June 26th	**Reflex Patterns of Movement** Moderator: Julius H. Comroe, Jr., M.D.
9:30 to 9:40 a.m.	Introduction—Julius H. Comroe, Jr., M.D.
9:40 to 10:40 a.m.	Neurophysiological Basis of Reflex Patterns of Movement Frances A. Hellebrandt, M.D.
10:40 to 10:55 a.m.	Visit exhibits
10:55 to 11:45 a.m.	Proprioceptive Facilitation Technics for Treatment of Paralysis Herman Kabat, M.D.
11:45 to 12:00 a.m.	Discussion led by Julius H. Comroe, Jr., M.D.
2:00 to 4:30 p.m.	**Research Papers** Moderator: Frances A. Hellebrandt, M.D.
2:00 to 4:30 p.m.	Movies
Friday, June 27th and Saturday, June 28th	**Instructional Courses**
All day Friday and Saturday morning	**Electrical Investigation** Mary Elizabeth Kolb **Reflex Patterns of Movement** Margaret Knott **Analysis of Gaits** Signe Brunnstrom **Functional Anatomy** Oscar V. Batson, M.D.

Technical Exhibitors

Among the technical exhibitors at the Annual Conference will be:

Birtcher Corporation
Burdick Corporation
Cosmevo Manufacturing Company
Elgin Exercise Appliance Company
Hanovia Chemical Company
Ille Electric Corporation
Liebel-Flarsheim
J. P. Lippincott Company
Medco Products Company
J. A. Preston
Raytheon Manufacturing Company
Ries Corporation
Saniglastic Corporation
W. B. Saunders and Company
Spencer Incorporated
Teca Corporation
Webster Therapeutic Equipment
Whitehall Electro Medical Company

1952 CONFERENCE COMMITTEES

Dorothy E. Baethke, General Chairman

Entertainment
- Ruth Guerin, Chairman
- Nevin Kressley, Subchairman

Publicity and Public Relations
- Jane Carlin, Chairman
- Norma Ritchie, Subchairman
- Elizabeth O'Dwyer, Subchairman

Properties and Equipment
- Betty Johnson, Chairman
- Daniel Bartholomew, Subchairman
- Ruth Jett, Subchairman

Special Courtesies
- Helen Snelbaker, Chairman
- Vera Keating, Subchairman

Information
- Elizabeth Carper, Chairman
- Blanche Abbott, Subchairman
- Dorothy Lord, Subchairman

Ushers
- Betty Schlosser, Chairman
- Eugene Michels, Subchairman
- Mary Elizabeth Kolb, Subchairman

All members of the Pennsylvania Physical Therapy Association have been placed on committees.

National Program Committee
- Betty Johnson, Chairman
- Margaret Kohli
- Marian Williams

School Section Meeting—1952

The Officers of the School Section have planned a program for the 1952 meeting which will be of great interest to all members of the School Section. The theme of the day's program is to be "Tests and Testing." A number of well known persons from the field of testing will present an informative panel discussion on the various types of tests, their values and uses. The discussion will include materials on testing related to both didactic work and clinical training. Other programs at the meeting will present material on test construction and types and uses of tests for already graduated physical therapists. Sample tests made up from the items recently submitted by the schools will be presented.

This is election year for the School Section. In accordance with the amendment to the Rules of Government at the 1951 meeting the Nominating Committee is preparing a slate of officers. Election of officers will take place at the afternoon session of the 1952 School Section meeting.

The meeting will be held on Saturday, June 21, 1952 at the Hotel Bellevue-Stratford at Philadelphia. The meetings will start at 9 A.M. and registration for the School Section meetings will take place from 8:30 A.M. to 9 A.M. of that day. The day's meeting of the School Section will close at 5 P.M.

Make your plans now to attend the 1952 School Section meeting. It is hoped that each school will be well represented at the meeting. All members of the American Physical Therapy Association are cordially invited to attend the School Section meetings.

Schools that have not already returned the test items requested in the last memo are asked to submit them as soon as possible so they may be compiled before the June twenty-first meeting.

Conference Program Speaker

JONATHAN E. RHOADS, M.D.

Dr. Rhoads, Professor of Surgery and Surgical Research, University of Pennsylvania, is presenting "The Management of Burns with Special Reference to Rehabilitation."

Dr. Rhoads received his M.D. from Johns Hopkins University and his D.Sc. (med.) from the University of Pennsylvania. He is also Professor of Surgery, Graduate School of Medicine, University of Pennsylvania; Chief, Surgical Division II, Hospital of the University of Pennsylvania; Assistant Director, Harrison Department of Surgical Research, University of Pennsylvania; and Senior Surgeon, Children's Hospital of Philadelphia, Pennsylvania.

The Philadelphia Gazette Vol. 5

Gentle Reader: This issue of our Humble Gazette must needs appear without the help of our Good and Wise friend Poor Richard. He has lately made it known to us that his Time and Energies are most wonderfully Taxed with Preparations for a Conference of Worthy Note. Be assured, if you are he who will be among this Noble Gathering, that all will be in Readiness for your Arrival, your Comfort, and your Edification. Each "busy-body" has been Shined and each white step gleams a welcome.

We would acquaint you this Day with all that is Known and Historical concerning the Greatness of Philadelphia as a Center of Medicine since this will most Surely be of Interest. Here you will find a most Singular Opportunity to visit the Hospital founded by our own Revered and Honored Benjamin Franklin. Still Active and Dynamic today after Sterling service of more than Two Hundred Years, the Pennsylvania Hospital contains many Items which the Visitor will wish to see. On the Entrance one can see the Quaint Inscription written by Franklin which dedicated this building and reads, "In the year of Christ, MDCCLV George the Second happily reigning (for he sought the happiness of his people), Philadelphia flourishing (for its inhabitants were public spirited), this building, by the bounty of the government, and of many private persons, was piously founded for the relief of the sick and Miserable. May the GOD OF MERCIES bless the undertaking."

Within the Building rest a Host of Memorable Treasures including the Old Library, with its ponderous tomes, the antique Demonstration Rooms in the High Tower and the Magnificent and Familiar Portrait, Christ Healing the Sick" by Benjamin West.

Your Attention is Respectfully called to the fact that in Philadelphia stand five Established and Hallowed Schools of Medicine including the University of Pennsylvania, the first established in the United States (1765); Jefferson (1824); Hahnemann (1848); Women's Medical (1850); and Temple University (1901), Truly a Magnificent Heritage of the World of Healing! The contribution of these Institutions may be Realized when we consider that while Today there are some 4,000 Physicians in Philadelphia, in 1825 the total Medical population was Officially given as: *"169 Physicians, 25 Cuppers, Bleeders, and Leeches, 18 Dentists, 10 Midwives, 78 Nurses and 16 who were Layers Out of the Dead."*

Today the 80 Hospitals of Metropolitan Philadelphia along with such other Institutions as Wistar Institute of Anatomy, the College of Physicians and Surgeons, and the Medical Section of Franklin Institute are most Admirably equipped and waiting for the Perusal of our Expected Visitors. We do most Earnestly suggest that this Rich Fund of Historical and Modern Medical information receive your Attention and Consideration.

FIRST MEDICAL SCHOOL IN AMERICA, 1765

Franklin's Library on Fifth Street below Chestnut was built near it in 1790. The building with the tower, at the right, was the forerunner of the University of Pennsylvania Medical School.

Handsome double staircase in Center Building. Inside the original wood pillars steel shafts have been added. Inset in the newel posts are "amity buttons" indicating that relations were cordial between builder and hospital during construction.

Membership News

Mrs. Mary F. Waples passed away on February 6, 1952, in Wadsworth Hospital, Los Angeles. She had been a member of the American Physical Therapy Association since 1944, and at the time of her passing she was Chief Physical Therapist at the Veterans Administration Hospital, Houston, Texas.

Mrs. Waples graduated in physical therapy from Stanford University, and served as a physical therapist with the Army of the United States. She is survived by a son and a daughter.

Word has just been received that **Mrs. Mary Riedel Nuce** of Marietta, Georgia passed away some time in November. At the time of her death she was an inactive member of the Association.

She became a member in 1940 following her graduation from Walter Reed Hospital, and retired from active practice in 1947 after a tour of duty in the Army and subsequent work at the Carrie Tingley Hospital for Crippled Children in New Mexico.

Marriages

Pauline T. Moran of Brookline, Mass., to Ensign Norbert E. Andres, Jr., U.S.N.R., Brookline, Mass.

Jean K. Hjelte of Eugene, Ore., to Walter G. Banks, Eugene, Ore.

Henrietta Berenson of Chicago, Ill., to David Bernstein, Laona, Wis.

Susan Everhard of Durham, N. C., to William R. Collins, Akron, Ohio

Alice Goodman of Seattle, Wash., now Mrs. Alice G. Donohue, Berkeley, Calif.

Mary E. Courtney of Framingham, Mass., now Mrs. Mary C. Gardiner, Milton, Mass.

Eulalia Webb of Chamblee, Ga., now Mrs. Eulalia W. Hodge, Berkeley, Calif.

Grace Walter of Truth or Consequences, New Mexico, now Mrs. Grace W. Holloway, Truth or Consequences, New Mexico

Mrs. Maryann Brown of East Orange, N. J., now Mrs. Maryann Molloy, Rumson, N. J.

Mildred T. Murphy of Los Angeles, Calif., to Henry Wright, Port Hueneme, Calif.

New Student Members

Columbia University

Barbara Spaulding

Mayo Clinic

Harold J. Egli
Dorothy F. Menefee
Margaret H. Morey
Oscar P. Weidler

St. Louis University

James E. Roetto
Harold G. Smith

University of Pennsylvania

Anna Dombrovskis
Alvin Glass
Jacqueline E. Jackson
Gordon A. Kober
Robert J. Olufs
Elfreda J. Perreten
Donna M. White
William L. Woods

General News

American Journal of Physical Medicine

The former *Journal of Occupational Therapy and Rehabilitation* published by Williams and Wilkins Company is now the *American Journal of Physical Medicine*. Dr. Harry D. Bouman, Professor of Physical Medicine of the University of Wisconsin, is the new editor.

In the introduction, Dr. Bouman reviewed the history of the magazine. It was founded in 1922 by Dr. William R. Dunton under the title of the *Archives of Occupational Therapy*. In 1925, the title was changed to *Occupational Therapy and Rehabilitation*. In 1947 it became an independent journal to the medical profession under the editorship of Dr. Sidney Licht.

Dr. Bouman paid tribute to Dr. Dunton and Dr. Licht for the growth and development of the magazine under their stewardship. The section developed by Dr. Licht, which was of great interest, was the International Review of Physical Medicine.

The editorial policy of the journal will be a continuation of the policy to which Dr. Licht adhered. Papers will be published solely on the bases of whether or not the paper contributes to the field of Physical Medicine.

Our best wishes are offered to Dr. Bouman, and our appreciation to Dr. Licht for his efforts, editorial courage and honesty, during his years as editor.

Dr. Licht Honored

Dr. Sidney Licht has been elected an honorary member of the British Association of Physical Medicine.

Bay State Rehabilitation Conference

Approximately 700 people interested in the problems and training of the handicapped attended an all-day statewide rehabilitation conference in

Boston recently (March 12), where they were given a practical demonstration showing how one agency in Massachusetts is helping crippled children and adults to a life of usefulness.

Emphasis was placed on current rehabilitation training methods and a discussion of the problem of encouraging the employment of rehabilitated crippled people.

Following a presentation, "Toward Useful Living," dramatizing the way Easter Seals work in Massachusetts to help the handicapped, the afternoon program featured actual clinical demonstration.

New Publication

"Careers in Service to the Handicapped." Information for Vocational Guidance Specialists on the Professions of Physical Therapy, Occupational Therapy, Speech and Hearing Therapy, and Special Education.

This is an example of cooperation in both the preparation and publication. The professional organizations concerned prepared the material on their respective areas. The National Society for Crippled Children and Adults edited and prepared the brochure for publication. The National Society and the National Foundation for Infantile Paralysis in cooperation with the Federal Security Agency, Office of Vocational Rehabilitation, published the brochure.

It is an attractive, well prepared, informative, illustrated brochure. In the foreword, Mr. Lawrence Linck, Executive Director of the National Society of Crippled Children and Adults, points out to the counselors, "This booklet is published at a time when our nation is faced with a challenge to reach the highest development of national security in our entire history. To reach this goal all manpower needs must be brought to the attention of the American public and all persons must be given an opportunity to perform useful work to the fullest extent of their capacities. Rehabilitation workers help make thousands of persons fit for thousands of occupations that play a vital role in the strength of this country. These are also occupations which may be performed by individuals with physical disabilities. It is with this thought that I direct your careful attention to this booklet which contains a basis for you to introduce ambitious young people to fascinating careers."

The booklet is being distributed to guidance counselors, superintendents of schools, and institutions for higher learning throughout the country. Additional copies are available at fifty cents.

Annals of Physical Medicine

This is a new quarterly publication and is the official organ of the British Association of Physical Medicine. It will contain original articles by members and others interested in the specialty. It also contains abstracts of world literature on the subject.

It is published by Headley Brothers, 109 Kingsway, London W C 2. Subscription price, U. S. A., $3.00 per year, including postage.

Eastern Section of Congress of Physical Medicine Meets in Spring Session

The Spring Session of the Eastern Section of the American Congress of Physical Medicine is being held on Saturday, May 3, 1952 at the State Veterans Home and Hospital and the Hospital for Chronic Illness in Rocky Hill, Connecticut. Physical therapists are welcome to attend.

The morning session will be devoted to a visit to the Department of Physical Medicine and Rehabilitation. The program for the afternoon session is as follows:

1. Evaluation Clinic.
2. Medicolegal Aspects of Industrial Injuries, Samuel Sherman, M.D.
3. The Scapulo-Humeral Angle—An Aid in the Diagnosis and Prognosis of the Stiff and Painful Shoulder, Harold Lefkoe, M.A., M.D., A.I.C.S.
4. Mechanics of the Feet, Allen S. Russek, M.D.
5. The Physical Aspects of Radiation, Lewis Dickar, M.D.
6. Ultrasonic Therapy, H. J. Behrend, M.D.
7. Serum Neuritis, Arthur L. Watkins, M.D.

May 1, 1952 — Child Health Day

On Child Health Day, 1952, many groups of citizens will be meeting to plan child-health building projects. Attention will be focused especially on State Programs and the many thousand crippled children they serve.

"The Nation is making slow but sure progress in its programs for crippled children as more states extend their services to reach children with conditions which cripple or may cripple them," Dr. Arthur J. Lesser, Director, Division of Health Services of the Children's Bureau, Federal Security Agency, reports.

It was not until 1897 that any state passed a law to aid crippled children, Dr. Lesser points out.

Now all States have programs which provide care for at least a limited number of children who are under 21 years of age and have a handicap that needs orthopedic or plastic treatment. This means children with harelips, cleft palates, club feet; children with deformed bones; children who have been seriously burned or have been badly hurt in an accident.

About half the States also include in their programs children with rheumatic fever and cardiac conditions. An increasing number are developing services for children with cerebral palsy, epilepsy, and for children with visual and hearing handicaps, Dr. Lesser reports.

"There is a clear trend," Dr. Lesser says, toward the inclusion of more types of handicapping conditions in State crippled children's programs.

More children now receive care under State crippled children's programs than in any year since the programs started, Dr. Lesser says.

During 1950, approximately 215,000 children received diagnostic or treatment services from doctors, either in clinics, hospitals, convalescent homes, or through office and home visits. This was an increase of 35,000—or 18 percent—over the number of children who received such care in 1949.

In addition to the care given by physicians, many children also are served by public health nurses, medical social workers, nutritionists, physical therapists, occupational and speech therapists and other medical personnel making up the rounded team of a crippled children's program.

State agencies, in offering these programs, receive financial help from the Federal Government through grants administered by the Children's Bureau.

When the Social Security Act was first passed, the amount of Federal grants authorized to help States in their crippled children's programs totaled $2,850,000 annually. In 1939, it was increased to $3,750,000, in 1946 to $7,500,000, and in 1950 to $15,000,000 for each year after 1951.

From the first full year following the original enactment of the Social Security Act until the fiscal year 1951, the full amount of funds authorized by Congress was appropriated each year. In 1951, the total authorized for the first year after the 1950 amendments was $12,000,000, and the amount appropriated was $9,975,000. For 1952 the crippled children's grants total $11,385,500.

Dr. Lesser points out that the State crippled children's programs are important not only for the care which they provide for children, but also because of the graduate training for professional workers made possible by these funds.

Colleges Offer Summer Courses in Study of Exceptional Children

The Michigan State Normal College of Ypsilanti, Michigan offers a special program in Cerebral Palsy for the summer of 1952. This will include:

1. A two semester hour course for teachers
2. A demonstration class
3. A teaching clinic by Dr. M. A. Perlstein, Consultant for the National Society for Crippled Children and Adults, Inc.
4. A pre-school for cerebral palsied children and a parent institute for mothers of cerebral palsied children. Qualified physical therapists will be accepted for admission.

The credit course for teachers will be offered during the three weeks, June 23 to July 11 and may be selected by the regular six-week students. Preliminary enrollment should be made by June 1. Write for special bulletin to F. E. Lord, Director, Horace H. Rackham School of Special Education, Ypsilanti, Michigan.

The School of Education of Syracuse University announces a special summer session program in Education for Exceptional Children. Opportunities are available in numerous individual courses from June 30 to August 8, 1952. A special workshop on Problems of Cerebral Palsy will be given from July 21 to August 8. Qualified physical therapists are eligible for admission. The program is arranged with the cooperation of the New York State Association for Crippled Children, and the National Society for Crippled Children and Adults, Inc. A $37.00 fee will be charged. For additional information contact William M. Cruickshank, Ph.D., Director, Education of Exceptional Children, The School of Education, Syracuse University, Syracuse 10, New York.

Commission Charts Research Program at Third Annual Meeting

Plans for an intensified research program were charted at the Third Annual Meeting of the Commission on Chronic Illness, January 28th and 29th in Chicago.

Leonard W. Mayo, New York, reelected Chairman of the group, stated that swift progress in the research and fact-finding activities can now be assured. Pledges of financial support have been obtained for completion of the program within the next three to five years.

Detailed plans for companion studies of the

need for facilities and services for the chronically ill—one in a rural area and another in an urban area—were adopted as the Commission's key research projects.

The studies will provide first-time answers to these questions for each of the population areas: What is the extent and kind of need for chronic illness care in hospitals? What skills and equipment are needed? How much and what kind of services are needed to care for child and adult long term patients in their own homes, and homes for the aged? How many chronically ill persons would benefit from rehabilitation? What kind and how many services and skills would be needed to provide rehabilitation services in a community? in hospitals? in community centers? in sheltered workshops? The studies will also test the usefulness of present knowledge about multiple screening for detecting chronic diseases in the early stages. Data will be obtained on the prevalence of chronic disease among apparently well people.

Other Commission research projects include: surveys to determine the status of state and local services and facilities for the chronically ill. These are directed to general hospitals, state health departments, state medical societies, community welfare planning councils, nursing organizations, state welfare departments, and nursing homes.

From the *Chronic Illness* Newsletter, March 1952.

World Health Day Observed April 7

Dr. Brock Chisholm, Director General, World Health Organization, outlined some of the steps by which "You Can Help Build This Better World," marking the celebration of World Health Day. He said:

"Healthy Surroundings Make Healthy People—the theme suggested for the observance of World Health Day in 1952—points to a goal shared by all nations, and it shows where some of the problems lie which must be solved if efforts to improve health throughout the world are to succeed.

"Despite the magnificent progress made by medical science, three out of every four men, women and children in the world still suffer from diseases spread by unsafe water supplies, unsanitary excreta disposal, uncontrolled insects and rodents, and inadequate protection of milk and other foods. The responsibility for this tragic wastage of human life and energy rests with each of us, individually, in our threefold capacity as members of the family and of the local community and as citizens of a shrunken world.

"Each of us needs to realize that sanitation is, after all, a way of life. Whether we live in a 'developed' or an 'underdeveloped' country, it is our duty both to ourselves and to our neighbors to practice certain elementary principles of hygiene which can be applied with little, if any, expense by individuals and families. By keeping a clean home, a clean shop, a clean factory and a clean neighborhood, we are meeting one of the first requirements for our own health and for a healthy community.

"But we must go beyond this; we must also support fully the establishment and development of local and national programmes in community sanitation. They deserve our support because they aim at providing services designed to protect us against the many dangers that may threaten health and life if conditions in our physical environment are unsatisfactory.

"Finally, as citizens of a world where all men have become neighbors, we must share with one another the things we learn about promoting health and preventing disease through the techniques available to the modern science of environmental sanitation. Such an exchange of knowledge among all countries is as justified on humanitarian grounds as it is essential for reasons of self-interest. The World Health Organization has, from its beginning, given a high priority to international measures for raising standards of environmental sanitation. Along with its other activities, WHO will continue to support and encourage local, national and international efforts directed towards helping people to achieve a reasonable control of the physical features of their environment.

"I earnestly hope that the observance of World Health Day on this April 7th will serve to make clear to men, women and children everywhere the value of healthy surroundings and their importance for the health of all peoples."

POLIO PLEDGE *(Continued from page 246)*

If Polio Strikes My Home

I Will

Have confidence in my doctor, knowing the earlier the care the better my child's chances for complete recovery. I know that my child has a better than even chance to recover without paralysis.

Call my local chapter of the National Foundation for Infantile Paralysis immediately for information or help. The telephone book or my health department will tell me how to reach the chapter.

Remember that whatever financial help my family needs for polio care will be given through the chapter. This is made possible by the gifts of the American people to the March of Dimes each January.

Schools of Physical Therapy

APPROVED BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS
OF THE AMERICAN MEDICAL ASSOCIATION

Graduates of these schools are eligible for membership in the American Physical Therapy Association.

Name and Location of School	Medical Director and Technical Director	Entrance Requirements	Length of Course	Classes Start	Certificate, Degree, or Diploma
CALIFORNIA					
[1]**Childrens Hospital Society,** Los Angeles (in affiliation with University of California, Los Angeles)	Samuel S. Mathews, M.D. Mary J. Dodge	a[3]-b[3]-d-e g[4]	14 mo 4 yrs	Sept	Certificate Degree
[1]**College of Medical Evangelists,** Loma Linda	F. B. Moor, M.D. R. Wm. Berdan	a-b-c-d-e g	15 mo 4 yrs	Sept	Certificate Degree
[1]**Univ. of So. California,** Los Angeles	Charles L. Lowman, M.D. Charlotte W. Anderson	a-b-d-e g[4]	14 mo 4 yrs	Sept Sept-Feb	Certificate Degree & Cert.
[1]**Univ. of California Medical School,** San Francisco	Lucile M. Eising, M.D. Margery Wagner	d-e g	12 mo 4 yrs	Sept-Feb	Certificate Degree
[1]**Stanford Univ.,** Palo Alto	Wm. Northway, M.D. Lucille Daniels	a-d-e-f g[4]	12 mo 4 yrs	Jan-June or Sept	Certificate Degree
COLORADO					
[1]**Univ. of Colorado Medical Center,** Denver	Harold Dinken, M.D. Dorothy Hoag	a[3]-b-d-e g[4]	12 mo 4 yrs	Sept	Certificate Degree
ILLINOIS					
Northwestern Univ. Medical School, Chicago	Emil D. W. Hauser, M.D. Gertrude Beard	a-b[3]-d-e	12 mo	Oct	Certificate
IOWA					
[1]**Univ. of Iowa,** Iowa City	W. D. Paul, M.D. Olive C. Farr	b-e	12 mo	Sept	Certificate
KANSAS					
[1]**Univ. of Kansas School of Medicine,** Kansas City	Donald L. Rose, M.D. Ruth Monteith	a-b-d-e g[4]	12 mo 4 yrs	Feb-Sept	Certificate Degree
MASSACHUSETTS					
Bouve-Boston School, in affiliation with Tufts College, Medford 55	Howard Moore, M.D. Constance K. Greene	g[4]	4 yrs	Sept	Degree
Simmons College, Boston	{Wm. T. Green, M.D. {Arthur L. Watkins, M.D. Shirley Cogland	a[3]-b-d-e g[4]	16 mo 4½ yrs	Sept	Diploma Degree
Boston Univ., Sargent College of Physical Education, Cambridge	Kenneth Christophe, M.D. Adelaide McGarrett	a-b-d-e f-g[4]	12 mo 2 or 4 yrs	Sept	Certificate Degree
MINNESOTA					
[1]**Univ. of Minnesota,** Minneapolis	Frederic J. Kottke, M.D. Ruby Green Overmann	d-f-g[4]	2 yrs	Sept	Degree
[1]**Mayo Clinic,** Rochester	Earl C. Elkins, M.D. Darrell Hunt	a-b-c-d-e	2 yrs	Sept	Certificate
MISSOURI					
[1]**Washington Univ. School of Medicine,** St. Louis	Sedgwick Mead, M.D. Beatrice F. Schulz	f-g[4]	2 or 4 yrs	Sept	Degree
[1]**St. Louis Univ. School of Nursing,** St. Louis	A. J. Kotkis, M.D. Sr. Mary Imelda	f-g[4]	2 or 4 yrs	Jan-Sept	Degree

Name and Location of School	Medical Director and Technical Director	Entrance Requirements	Length of Course	Classes Start	Certificate, Degree, or Diploma
NEW YORK					
Albany Hospital, Albany	John W. Ghormley, M.D.	a-b-d-e	12 mo	Sept	Certificate
(in affiliation with Russell Sage College, Troy)	Catherine Graham	g[4]	4 yrs		Degree
[1]**Columbia Univ.,** New York	Wm. B. Snow, M.D.	a-b[3]-e	12 mo	Sept	Certificate
	Floy Pinkerton	f	2 yrs		Degree
[1]**New York Univ., School of Education,** New York	George G. Deaver, M.D.	a[3]-b[3]-d-e	12 mo	Sept	Certificate
	Elizabeth C. Addoms	g[4]	4 yrs		Degree
NORTH CAROLINA					
[1]**Duke Univ., School of Medicine,** Durham	Lenox Baker, M.D.	a[3]-b[3]-d-e	15 mo	Oct	Certificate
	Helen Kaiser				
OHIO					
[1]**Cleveland Clinic,** Cleveland	Walter J. Zeiter, M.D.	a-b-d-e	12 mo	Oct	Certificate
	Mildred Heap				
PENNSYLVANIA					
[1]**D. T. Watson School of Physiatrics,** Leetsdale	Jessie Wright, M.D.	a[3]-b[3]-d-e	12 mo	Oct	Diploma
	Kathryn Kelley				
[1]**Univ. of Pa. School of Auxiliary Med. Serv.,** Division of Physical Therapy, Philadelphia	George M. Piersol, M.D.	e	12 mo	Sept-Feb	Certificate
	Dorothy Baethke	g[4]	4 yrs	Sept	Cert. & Degree
TEXAS					
[1]**Hermann Hospital,** Houston	Oscar O. Selke, Jr., M.D.	a-b-d-e	12 mo	Oct	Certificate
[1]**Univ. of Texas School of Medicine,** Galveston	G. W. N. Eggers, M.D.	a-b-e	12 mo	Jan	Certificate
	Ruby Decker	d			Degree
VIRGINIA					
[1]**Med. College of Va.,** Baruch Center of Phys. Med., Richmond (in affiliation with Richmond Prof. Inst.)	Walter J. Lee, M.D.	a-b-d-e	12 mo	Sept	Diploma
	Susanne Hirt	g[4]	4 yrs		Degree
WISCONSIN					
[1]**Univ. of Wisconsin Med. School,** Madison	Harry D. Bouman, M.D.	a-b-c-e-f	12 mo	Sept	Certificate
	Margaret Kohli	g[4]	4 yrs	Sept-Feb	Cert. & Degree
U. S. ARMY MEDICAL SERVICE					
(a) **Medical Field Service School,** Brooke Army Medical Center, San Antonio, Texas, and	Charles D. Shields, Lt. Col., M.C.	e	12[2]	Mar-Sept	Certificate
	Agnes P. Snyder, Major, WMSC				
(b) **Fitzsimons Army Hospital,** Denver, Colorado	H. B. Luscombe, Col., M.C.	Completion of Medical Field Service School			
	Harriet S. Lee, Major, WMSC				
(c) **Walter Reed Army Hospital,** Washington, D. C.	John H. Kuitert, Lt. Col., M.C.	Completion of Medical Field Service School			
	Brunetta Kuehlthau, Major, WMSC				
(d) **Letterman Army Hospital,** San Francisco	Raoul C. Psaki, Lt. Col., M.C.	Completion of Medical Field Service School			
	Emma T. Harr, Major, WMSC				

Entrance Requirements

FOR ONE-YEAR COURSE

a = Graduation from accredited school of nursing.
b = Baccalaureate degree with major in physical education.
c = Two years of college with science courses.
d = Three years of college with science courses.
e = Baccalaureate degree with required science courses.

FOR TWO-YEAR COURSE

f = Two years of college with science courses.

FOR FOUR-YEAR COURSE

g = High school graduation.

Footnotes

[1]Male students admitted.

[2]12 months' course includes training at the Medical Field Service School and Fitzsimons, Walter Reed, or Letterman Army Hospitals. Apply directly to the Surgeon General, Department of the Army, Washington 25, D. C.

[3]Additional college science credits required.

[4]Advanced standing students accepted.

Please address initial correspondence to the School of Physical Therapy in the institutions listed. Tuition and fees will vary from school to school.

Abstracts

Physical Treatment in Internal Medicine

Sedgwick Mead, M.D., St. Louis, Mo. In SOUTHERN MEDICAL JOURNAL, 44:10:881, October 1951.

Recent writers have stressed the frequency of periarthritis and shoulder-hand syndrome following myocardial infarction. It has been suggested that when myocardial infarction has been diagnosed, stiffening of the shoulder always should be looked for, and vice versa. Much emphasis has been placed on autonomic blockade (stellate blocks, sympathectomy). Physical therapy has been described as valueless.

The important point here is early recognition and prevention. When the patient is seen during the first week, a golden opportunity is at hand. Roentgen treatment is imperative, accompanied by gentle stroking massage, liberal use of analgesics, gentle active assistive motions of the limb daily through a tolerated range of motion, perhaps a temporary sling. Diathermy and other forms of heat are usually avoided during x-ray treatment.

The full-blown shoulder-hand picture is essentially a geriatric phenomenon. Treatment consists of dogged fractional manipulation when necessary aided by intravenous procaine or ACTH or cortisone to control pain, supplemented by active exercises and home occupational therapy carried out by the patient. In addition to the traditional circumduction exercises and wall-climbing with the fingers, the patient can be taught the use of towels and broomsticks behind the back to bring back internal rotation. A simple shoulder wheel can be constructed by a 2 x 4 plank bolted loosely to the garage wall with a wooden handle which can be moved successively outward as joint range increases. The other end of the 2 x 4 can be counterweighted to give increased resistance.

Manipulation under general anesthesia may have to be carried out in certain neglected cases. It may result in multiple small hemorrhages and capsular tearing. Unless almost hourly passive exercises are given, under liberal morphine medication, for the next 48 hours, the patient will revert quickly to his previous status.

The chances of recovering complete hand function in a 73-year-old patient with neglected shoulder-hand syndrome are remote. Nevertheless one should begin with daily paraffin baths for two weeks, followed by whirlpool treatment with increasingly active exercise. Friction massage, fractional manipulation with strong traction, and electrical stimulation of forearm and hand muscles are important aids.

The most pernicious thing is the frequent, innocently given advice of the internist or general practitioner to avoid all exercise until pain has subsided. Even the patient in advanced cardiac failure can tolerate passive movements of the joints without harm.

While advanced claw hands seldom recover even with treatment, the frozen shoulder eventually recovers both motion and strength. Physical therapy is intended first, to prevent irreversible changes and second, to speed recovery.

The two types of degenerative arthritis which respond most gratifyingly to physical therapy are found in the cervical spine and in the knee joints. Relaxing heat from diathermy or a tungsten lamp is followed by traction in the former case, and by progressive resistance exercise to rebuild the quadriceps muscle in the latter. Acute Heberden's nodes may be treated by paraffin baths, followed by grip exercises, while massage is of little value.

In rheumatoid arthritis, treatment must be tempered by the acuteness of symptoms. In the most extreme cases only hot packs or tubs, supportive splints, massage, and gentle passive motions can be tolerated. The use of cortisone and ACTH, however, permits artificial remissions during which intensive physical therapy can be carried out to increase joint range and muscle strength. Contrast baths and paraffin baths are easily improvised by the patient at home. Members of the family also can be taught stroking massage and to help carry out active assistive motions of all affected joints for preservation and increase in motion range.

In the treatment of low back pain, luminous heat and stroking massage may or may not be effective aids, depending upon the severity. The late rehabilitation of these patients requires their cooperation at a time when they are nearly asymptomatic and therefore reluctant to accept treatment. The main elements at this time include: (1) cautious stretching of all contractures; (2) rebuilding of atrophied musculature with progressive resistance exercise; (3) discontinuance of corset or brace; (4) instruction in how to lift heavy articles without precipitating new attacks, and (5) advice on type of bedding to be used.

The physical therapy prescription or hemiplegic patients should include elevation of the affected extremities to drain away edema, followed by massage of the shoulder and assistive or passive motions through the complete range. Tetanizing currents may be used to stimulate proprioception in strongly inhibited muscles such as the shoulder abductors, elbow extensors, forearm supinators, and wrist and finger extensors; in the lower extremity chiefly the knee extensors and ankle dorsiflexors.

After the first few months electrical stimulation is useless and may even be harmful. If the upper extremity is quite inert, spring suspension must be instituted to hold the humerus in abduction and facilitate reeducation for tasks such as eating. Progressive resistance exercise both for the uninvolved extremities, and, when possible, for the affected side are used. Pulley and bicycle exercises for alternating rhythms are excellent adjuncts.

Better Care for the Aged

In HOSPITAL PROGRESS, 32:11:344, November 1951.

The meeting of the International Gerontological Congress in September 1951 was divided into four sections, one of which was of particular interest to hospitals and institutions for the aged. This section on "Medical Services, Hygiene, and Housing," made a number of suggestions which are of interest.

The home for the aged should be seen as one of a series of services. The goal should not be permanent residence for all who enter, but, whenever possible, rehabilitation for semi-independence in other settings.

It is important that physical medicine and rehabilitation services, and recreational and diversional therapy be encouraged in all institutions caring for older people. With a greater awareness of the value of profesional services, a more adequate number of trained personnel will be employed in homes, hospitals, and other agencies dealing with older people.

There is a need for additional rehabilitation centers, with properly trained staffs, to be established on a combined area and population basis.

Physical Examination of the Cerebral Palsied Child

Russell V. Fuldner, M.D., New Haven, Conn. In THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 148:1:34, January 5, 1952.

Within recent years certain medical and lay groups have shown an active increase of interest in the varied problems of children with cerebral palsy. At least sixteen new cerebral palsy centers of permanent character have been established in this country during the past four years. For the most part these facilities are designed for case-finding, diagnosis, and treatment; a few of them have been set up to meet the unusual educational needs of cerebral palsied children. A national parents' society, with objectives in cerebral palsy comparable to those of the National Foundation in the field of infantile paralysis, was founded in 1949. All of this increased attention to cerebral palsy has highlighted the desirability of early diagnosis and prompt and adequate treatment.

The purpose of this article is to outline methods, none of them essentially original, which have been found helpful in evaluating cerebral palsy infants and children. Stress has been laid on reducing the multitude of possible clinical tests to a concise form. In many cases the examining physician will need help from one or more of his colleagues in the specialties or from those specially versed in speech, perceptual, and behavior disorders. While the importance of consultations can scarcely be overstressed, it is essential that at least one member of the team assume responsibility for correlating this data with the broad evaluation outlined in this article. The aim is to achieve a working diagnostic and prognostic concept which takes into account the child as a whole, both as a patient and as a burgeoning personality.

The eliciting and interpretation of physical signs in these children often are of such interest and complexity that the examiner may lose sight of the wood for the trees. Initially at least, a conspectus of the patient's abilities and disabilities is of more practical importance than an attempt to establish the localization of the lesion. This concept forms the basis of the examination technic.

For the physician who undertakes to assist the progress of the cerebral palsied child, the initial step is a thorough appraisal of the patient in terms of his background and development, and of his sensory, motor, and intellectual assets. Not only will the best interests of the individual patient be served thereby, but the physician will help to guide into fruitful channels the ever increasing volume of lay and legislative assistance for cerebral palsied children in general.

Manipulation of the Lumbosacral Joint

Edmund H. Schweitzer, M.D. In THE OHIO STATE MEDICAL JOURNAL, 47:10:930, October 1951.

The typical patient, in which it is our feeling that manipulation is indicated, is one who walks into the office or is seen in the outpatient department of the hospital giving a history that on two, three or four days previously, he had been bending over just picking up some object. Ordinarily the object is not heavy and is of no great significance. On picking it up in a certain twisting maneuver of the low back, the patient feels a snap in the back below the belt line and on rising he has immediate pain in the part which is identified as the lumbosacral joint. He has been unable to completely extend the lumbar spine, and hyperextension of the back causes pain and a great amount of discomfort. Ordinarily he has tried some conservative treatment at home such as heat or warm baths or massage to the back, but has obtained very little if any relief from these conservative measures. The usual history is that he has not had any symptoms before and that this is the original complaint with him.

It is not felt that manipulation of the lumbosacral joint can be gone into lightly and used routinely in low back pain problems. The cases have to be selected very carefully and they have to fall into a certain pattern as far as history, acuteness, and physical findings are concerned, and by all means must have ruled out the possibility of skeletal pathology in the lumbosacral area, such as spondylolisthesis or spina bifida or lumbarization of the first sacral vertebra, and many of the other congenital anomalies which sometimes will give complicating pictures in this type of case. The procedure is convincing after seeing sixteen cases which were back cripples one day, and finding the next day that thirteen were complaining of very little if any pain, and were able to stand erect without backache. Many of our cases were industrial cases and tying them up with traction devices, diathermy, and heating pads would have delayed their return to work and also would encumber their earning power for a period of weeks or months. From an economical standpoint and from a practical standpoint the patient's ability to return to work four or five days after the manipulation is much to his benefit.

In some of these cases there is going to be failure to help the patient; these will require further study with neurosurgical consultation, and myelography will be necessary. But in the majority, orthopedic manipulation will bring about the desired results. In competent hands when the cases have been worked up carefully, and x-rays studied thoroughly, there should be no reason for complications from the actual manipulative procedure.

A Mechanical Quadriceps

Louis N. Rudin, M.D., and Daniel J. Cronin, Baltimore, Md. In ARCHIVES OF PHYSICAL MEDICINE, 33:1:15, January 1952.

Impairment of quadriceps function, varying from mere weakness to complete paralysis, presents an important problem in rehabilitation work. The quadriceps is a key muscle in the maintenance of the upright posture and in locomotion, prevents the knee from collapsing when acted upon by the weight of the body, extends the leg from a position of flexion and makes forward stepping possible. The quadriceps is assisted in performing these functions by the tensor fascia lata and the gluteus maximus. The usual procedure to overcome quadriceps paralysis and deficiency is to apply a long leg brace with a knee lock, which keeps the knee rigid for the support of the body. When the patient sits down he releases the knee lock and thereby is able to flex the extended extremity at the knee. As a substitute for an irreversible, permanent weakness, or paralysis of the quadriceps, a brace attachment has been designed. It consists of a spiral spring of piano wire, made of tempered steel, which is attached with screws to a standard long leg brace. The tension developed by the spring depends upon the gauge of wire, the number and circumference of turns, and whether a spring is used on one side or both sides of the brace. The tension of the spring, acting through its levers, produces a tension which keeps the knee ex-

tended in standing and walking. On sitting down the leg is flexed by the action of the hamstrings, which overcome the tension of the spring. This eliminates the necessity of a knee lock on the brace. In walking the spring allows for some to and fro flexibility of the knee joint, which is an additional improvement over the absolute rigidity of the usual long leg brace with a knee lock. The degree of quadriceps deficiency and strength of the hamstrings will determine the amount of tension desired in the spring. This in turn will be accomplished by the proper choice of wire, number of coils, and whether a unilateral or bilateral attachment is fixed to the brace.

The Present State of Ultrasonic Therapy

V. Buchtala, M.D. In THE BRITISH JOURNAL OF PHYSICAL MEDICINE, 15:1:3, January 1952.

Clinical experience has shown that ultrasonic therapy is useful for the following:

(1) Neuralgic conditions, with sciatic neuritis of particular importance. This condition requires individually adjusted dosage, and the sensitivity may vary considerably.

(2) Inflammatory conditions of the soft parts of the body. Comparison between x-ray treatment and sonation shows that the two treatments are about equally effective. Alleviation or abolition of pain follows rapidly upon the first application of ultrasonics in more than 50 per cent of the cases.

(3) Painful diseases of joints constitutes the main indication for the use of ultrasonics and includes conditions with or without arthritis deformans.

(4) Follow-up treatment of fractures, especially those which have healed without complication. On an average six sonations restore normal mobility particularly when they are combined with the usual physical therapy.

(5) Peripheral circulatory disorders, which react well to ultrasonics if they have a neural (spastic) background. Peripheral circulatory disorders such as Buerger's or Raynaud's disease respond to this treatment with an improvement which lasts for up to six months.

(6) Asthma bronchiale usually can be favorably influenced by ultrasonics but chronic conditions of this group are hardly ever entirely eliminated.

(7) Peptic ulcers. There is much difference of opinion as to the value of ultrasonic therapy for gastric and duodenal ulcers. Ultrasonic treatment sounds convincing; however, suggestions for ultrasonic therapy for peptic ulcers should be made with reserve, for the spontaneous relief from pain may mask an acute case which should not be sonated.

After some years of experience the general opinion is that ultrasonics offer an effective form of physical therapy which in trained hands involves no dangers of delayed adverse effects corresponding to x-ray effects. As to the more acute damage, it is of course essential that the therapist be familiar with the relevant laws of physics.

A few specific contraindications should be mentioned. Malignant tumors which were earlier regarded as a hopeful field of ultrasonic therapy actually represent a strict contraindication. The ganglion stellatum must not be exposed to ultrasonics in cases of disorders of the heart or in subjects with unstable hearts, because it may cause prolonged states of depression and temporary paroxysmal tachycardia. Heart failure has been reported. Infants should not be subjected to ultrasonics since the developing bones may respond with disturbances of development. The pregnant uterus must not be sonated, though the experiments by Thiele who reported abortions in pregnant mice exposed to ultrasonics were not supported by the investigations of other authors or by the experience of Buchtala. Similarly, it has been stated that the ovary was readily damaged by ultrasonics. A more general danger may arise from disregarding the subjective sensations which the patient may report. Excessive intensities or excessive dosage may cause blistering of the skin, but even in such cases lesions of deeper layers have not often been recorded.

Ultrasonic Wave Therapy in Osteoarthritis of the Hip Joint

Theo De Preux, M.D., Lausanne. In THE BRITISH JOURNAL OF PHYSICAL MEDICINE, 15:1:14, January 1952.

Evidently ultrasonic therapy does not solve the problem of osteoarthritis of the hip joint. Its value will be limited in advanced cases with destruction, severe mechanical and static impairments. But for the great majority of cases of osteoarthritis at their onset, and many of the moderate ones, ultrasonic therapy well applied improves subjective symptoms: relief from nocturnal pain, then from pain in walking. Articular mobility will improve as long as its limitation is caused by functional disturbances. Even if articular destruction as seen on radiographs cannot be reversed into the *status quo ante*, a succession of skiagrams will sometimes show an improvement of some of the lesions: pseudocysts in the bone or erosion of the articular surface. The picture of these cases is one of healing and sclerosis. Given the anatomical character of the lesions, clinical recovery will not exceed a certain extent. Benefit of treatment will last for from a few months to two years. Treatment repeated at regular intervals will keep results steady in most cases.

Comparison of ultrasonic therapy with other conservative treatment allows us to consider this therapy as one of the best conservative methods at our disposal today.

Diagnosis of Injury to the Roots and Branches of the Lumbar Plexus with Report of a Case

Raoul C. Psaki, Lt. Col., M.C., and John H. Kuitert, Lt. Col., M.C., Washington, D. C. In ARCHIVES OF PHYSICAL MEDICINE, 33:1:10, January 1952.

Interest in nerve injuries always is stimulated during the hostilities of modern warfare. Injury to several branches of the lumbar plexus secondary to a shell fragment wound presents a remarkable study in anatomy.

This case is discussed because it not only demonstrates the methods available for adequate study of a peripheral nerve injury but also for localization of that lesion anatomically.

The sensory examination, cobalt chloride and skin resistance tests, place the lesion in the distribution of the femoral and obturator nerves which are derived from the second, third and fourth lumbar nerves.

The voluntary muscle test further localizes the lesion, because strong voluntary function of the quadratus lumborum is indicative of an intact proximal root and the weakness is distal to this point.

The fibrillation found to be present in the muscles supplied by the roots of L-2 and 3 is absolute evidence that denervation is present. The additional findings of complex

motor units in the tensor fascia lata and gluteus medius to a lesser degree, with predominantly normal motor units, signifies a partial involvement of the fourth lumbar root. This also explains the trace function and low voltage readings in the quadriceps and trace function in the iliopsoas, which both receive part of their innervation from the fourth lumbar nerve.

This lesion specifically should involve the lower branch of the second lumbar root, the distal root and branch of the third lumbar root, and part of the upper branch of the fourth lumbar root.

The value of electromyographic studies in the diagnosis of peripheral nerve root injury (not easily accessible by other methods) is presented.

Management of Occlusive Arterial Diseases of the Extremities

Fay LeFevre, M.D., Cleveland. In THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 147:15:1401, December 8, 1951.

Arteriosclerosis obliterans and thromboangiitis obliterans are the two most important occlusive peripheral vascular diseases. The former occurs predominantly in the older age group of either sex, and the course of the disease is accelerated by the coexistence of diabetes mellitus. The latter occurs almost exclusively in young men. The end result of both diseases may be total disability. This, in part, may be modified by early recognition and careful management. Although these diseases differ pathologically, the resulting symptoms and signs are caused by arterial insufficiency. It was realized many years ago that patients with occlusive arterial peripheral vascular disease should be instructed to (1) avoid trauma; (2) avoid exposure to cold, and (3) avoid tobacco. These are basic principles that apply to the treatment of both diseases at any phase. It is convenient to consider treatment in three categories: physical medical measures, sympathetic nerve blocks and sympathectomy, and medical measures.

The application of local heat to the extremities is a physical medical procedure which deserves careful evaluation. Excessive heat on the extremities increases the metabolic demand for a greater blood flow, and rapidly depletes the available tissue nourishment. In the presence of arterial insufficiency the increased demand caused by the excessive heat cannot be supplied. Ischemia and the tendency toward gangrene therefore are increased. When direct heat is applied locally to a limb with decreased arterial circulation, no type of high-temperature heating apparatus should be used. These include short wave diathermy, electric bulbs, and infra-red heat, as well as hot water bottles and hot foot soaks of medicated or nonmedicated solutions. Heat may be applied safely to a limb only by means of one of the accepted thermostat cradles. The temperature never should exceed 95°F.

A helpful means of determining the safety of direct heat is the caudal or lumbar parasympathetic nerve block. If a rise in temperature of 4°F. or more following the block is noted, controlled heat probably is safe and may be comforting. If there is no temperature elevation following the block, the use of heat would undoubtedly be painful and frequently injurious.

Some patients with severe arterial insufficiency are relieved of their pain by the application of cold. In these patients gangrene usually develops, and they require surgical intervention regardless of treatment. Use of cold as a preoperative form of relief is beneficial but should not be employed with the expectation of saving the limb.

Vascular exercises as suggested by Buerger and Allen have been used by many physicians as a routine form of vascular therapy. The value of these exercises has never been determined physiologically, and E. V. Allen doubts their importance. Wilkins and associates recently have reported evidence which indicates that the standard exercises may not only be valueless but actually harmful. They investigated the effect of the dependent position on blood flow in the limbs. By means of determining the arteriovenous oxygen differences based on the Fick principle, they were able to determine variations in peripheral blood flow in relation to position. This study demonstrated an increase in blood flow when the limb was in a dependent position of about 15 per cent over the blood flow when the limb was in a horizontal position. Also, they demonstrated a large increase in the arteriovenous oxygen difference in the presence of slight muscular activity. It could be concluded that any postural exercises designed to increase the peripheral circulation should be carried out only if muscular tension is avoided. Active muscular exercise as suggested in the standard Buerger-Allen procedure appears undesirable.

The whirlpool bath, according to LeFevre, is helpful in treating certain ulcerated lesions. It must be carefully used, however, the time and temperature regulated, and maceration of tissue must be avoided. It is helpful in gently removing crusts and necrotic tissue. It has no place in the routine treatment of patients with vascular insufficiency without ulceration and can in no way alter intermittent claudication.

There is no single form of treatment for the management of occlusive peripheral vascular disease. Persistent use of conservative measures, however, may result in saving many limbs.

Peripheral Vascular Disease: Conservative Medical Management

Howard E. Heyer, M.D., Dallas. In TEXAS STATE JOURNAL OF MEDICINE, 48:1:7, January 1952.

The complete elimination of the use of tobacco is a prime essential in the therapy of Buerger's disease. The degree of physical activity should be reduced to a level below that known to cause discomfort. This may necessitate absolute bed rest if pain is severe. If any ulceration or inflammation, even of slight degree, is present, antibiotic therapy, preferably parenteral penicillin, should be given.

In addition to medical treatment, physical therapy frequently will be of considerable help in restoring normal circulation. Buerger's exercises, if performed regularly, will help many patients with this disorder. However, as a practical matter, it has been found difficult to be certain that patients will follow such laborious exercises during a long period. A much more helpful measure is the use of a motor driven oscillating bed which, by its cradle-like action, allows alternate dependency and elevation of the lower limbs. This, in effect, is a lazy man's type of Buerger's exercises, which may be performed, with benefit, for periods varying from eight to twenty-four hours per day. Heyer feels that this is the most efficient type of physical therapy that is available in the treatment of occlusive vascular diseases of the extremities. Alternate hot and cold immersion baths are harmful, if the temperature of the water is either too hot or too cold, respectively. For this reason, Heyer has discontinued their use.

ACTH and Cortisone in Rheumatoid Arthritis: A Follow-up Study of the Clinical Effect in Thirty-four Cases

Finn Fischer, M.D., Kansas City, and C. Stewart Gillmor, M.D., Kansas City. In JOURNAL OF THE MISSOURI STATE MEDICAL ASSOCIATION, 49:2. 123, February 1952.

Thirty-four patients with rheumatoid arthritis, mainly of a severe refractory type, were treated with short courses of ACTH, cortisone or both. Most of the patients had previously tried several other forms of treatment consisting of physical therapy, removal of suspected foci of infection (tonsils and teeth), synovectomy, fever and vaccine therapy, sulfa and penicillin, vitamins (high dosage vitamin D), hormones (including desoxycorticosterone with vitamin C and pregneninolone) and several other even less rational measures.

During the study of these patients, physical therapy was given as indicated. All the patients were hospitalized during the initial course of hormonal therapy. Joint measurements were done before and after each course of treatment and subjective or objective changes noted daily.

The indications for the use of ACTH and cortisone in rheumatoid arthritis as they appear following this study are as follows:

A. Short Courses:
   1. During acute exacerbations, especially when everything else fails.
   2. Prior to and during vigorous physical therapy in an attempt to restore joint function in cases that have not previously had sufficient treatment.
   3. Prior to and after plastic joint surgery.

B. Continuous Therapy.
   Only in selected cases in which benefit is obtained from daily doses of cortisone not exceeding 75 mg.

Chronic Rheumatoid Arthritis

Euclid M. Smith, M.D., Hot Springs National Park, Ark. In SOUTHERN MEDICAL JOURNAL, 44:10:925, October, 1951.

The therapeutic approach to this complex syndrome is extremely difficult and should be undertaken only after a thorough study of each individual patient. After sufficient data have been assembled and evaluated, a plan of therapy should be developed which will meet the individual requirements of the patient and maintain the individual in the best possible state of physical and mental fitness until complete rehabilitation has been attained. Adequate nutrition is essential. Physical and mental rest, rest balanced with exercise, are needed. The relief of pain and the prevention and correction of deformities are all important objectives of therapy. To attain these objectives there is available a goodly number of reliable therapeutic agents comparatively simple in their application, and in the hands of an experienced therapist they are of proven value. Drugs for relief of pain, improved nutrition, functional management, psychosomatic methods, orthopedic treatment, climate and spa therapy, and physical medicine,

AMERICAN PHYSICAL THERAPY ASSOCIATION
TWENTY-NINTH ANNUAL CONFERENCE
PHILADELPHIA—JUNE 23-27, 1952

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Mr. Bennett E. Tousley
Vice-president and General Manager, The Bellevue-Stratford
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Double room, twin beds and bath	**10.00**	**10.50, 12.00, 13.00, 14.00**

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all are reliable therapeutic measures, and when properly applied are most effective in relieving symptoms and in controlling the clinical course of the disease.

Even the most enthusiastic interpretation of all recorded observations in this field must lead to the conclusion that there is no specific therapy for rheumatoid arthritis.

Sphenopalatine Block in the Relief of Musculoskeletal Pain

Maurice S. Rawlings, Capt., M.C., U.S.A., and Charles S. Wise, M.D. In ARCHIVES OF PHYSICAL MEDICINE, 33:1:5, January 1952.

Ruskin and Amster have claimed dramatic relief of musculoskeletal pain in a wide variety of clinical conditions following the use of topical sphenopalatine anesthesia. Their method consisted of application of a surface anesthetic to the posterior nasopharynx in patients exhibiting muscle spasm and pain associated with rheumatoid arthritis, low back pain, subdeltoid bursitis and other clinical entities. Following single or repeated applications, marked subjective and objective relief was reported in almost all their patients. In spite of the lack of a controlled study by these authors, the simplicity of the technic used and the excellent results claimed warranted a more critical review of the procedure.

This is a report of a controlled study of the effectiveness of sphenopalatine block in a group of patients suffering with a variety of musculoskeletal and related disorders. The study included a group of 72 patients who received a total of 178 test applications. Forty-four patients received 2 per cent (Pontocaine[R]) tetracaine hydrochloride to the sphenopalatine area. Twenty-eight received sublingual applications or intranasal saline as control procedures.

There was no significant difference in response between control and test groups. Seventy-five per cent of control patients were benefited compared to sixty-two per cent for the test group.

Topical sphenopalatine block is considered a nonspecific procedure having no demonstrable pharmacological or physiological basis. It would appear that suggestion is the modus operandi.

The large incidence of musculoskeletal neurosis and psychogenic rheumatism, either pure or superimposed on organic lesions, is comparable to the high incidence of improvement from sphenopalatine block obtained in this series. Sphenopalatine block, therefore, should be considered a psychotherapeutic agent only; although it also may serve to temporarily relieve the functional aspects of disability in some cases of organic disease.

No physical or pharmacological therapy effective in musculoskeletal disease should be considered specific until the varied and profound effects of suggestion have been carefully controlled.

Effects of Ultrasonic Therapy on Rheumatic Diseases and Circulatory Disorders

Fritz Tschannen, M.D., Berne. In THE BRITISH JOURNAL OF PHYSICAL MEDICINE, 15:1:7, January 1952.

Certain forms of rheumatic disease have crystallized up to the present as the main indication for ultrasonic therapy. These are, in particular, the degenerative forms: osteoarthrosis (osteoarthritis), chondrosis and spondylosis. In inflammatory forms, as, for example in rheumatoid arthritis, no success other than a transitory analgesic effect is obtained by ultrasonic treatment. A single exception is formed by Bechterew's disease (rheumatoid spondylitis), in which quite satisfactory results can be achieved, provided complete ankylosis is not present.

In spite of the small number of years which have passed since its introduction, this method of treatment has attracted a number of adherents in various countries.

Under the influence of radicular ultrasonic therapy—that is to say, its application to the nerve-segment with which the affected limb is associated—there occurs a significant degree of loosening, relaxation of tension and improved circulation in the affected extremity.

The relaxation of muscle spasm leads to relief of pain, and this, in turn, to decrease in hypersensitivity of the related motor and sympathetic nerve-segments. Thus the vicious circle—irritation, hypersensitivity of nerve centers, muscular and vascular spasm, irritation—is interrupted at some point. Provided that the vascular system, particularly the capillary network, is still reacting elastically, the improved circulation in the periarticular tissues leads to regenerative processes in the joint.

In addition to the principal field of indication—that of the degenerative joint disorders—excellent results are seen in muscular rheumatism, lumbago, torticollis and muscular spasticity of the shoulder girdle, which often is still called plexus neuralgia.

Book Reviews . . . . .

The Organization of Bones. *By P. Lacroix, Professor in the Faculty of Medicine, University of Louvain, Belgium. Translated by Stewart Gilder, B.Sc., M.B., Assistant Editor, "Abstracts of World Medicine." Cloth; Pp. 235; illus. 87. Price, $6.00. Blakiston Co., Philadelphia, 1951.*

This book is a translation by Mr. Gilder, the assistant editor of Abstracts of World Medicine, from the original by P. Lacroix, a professor in the Faculty of Medicine at the University of Louvain.

This work is an essay which is based on previous articles by the author that deal with the biology of bone. It is written for anyone who is interested in the development of bone.

The first three chapters are concerned with the structure and the mode of growth of long bones, including histological studies. There is a chapter on the mode of growth of bone marrow and another on the growth of periosteum. Grafts of epiphyseal cartilage are discussed as well as grafts of osseous tissue. The function of the epiphyseal cartilage is the basis of another chapter.

The book is written in the form of a compilation of short essays. It has excellent illustrations of the histological development of bones. There are thirteen pages of bibliography. It deals with a fundamental subject and is not simple reading. There are many references to experimental work. In many instances the laboratory reports are followed by remarks from the author.

The reviews published here have been prepared by competent authorities and do not represent the opinions of the American Physical Therapy Association.

Diseases of the Nervous System. *By W. Russell Brain, M.D., D.M. (Oxon.), P.R.C.P. (London), Physician to the London Hospital and to the Maida Vale Hospital for Nervous Diseases. Cloth binding; price, $8.50. Pp. 1002; illus. 84. Oxford University Press, New York, 1951.*

For many years Dr. Brain has been recognized as an outstanding authority in the field of clinical neurology. This fourth edition of his textbook upholds his reputation. It is comprehensive in its scope, covering all of the more familiar neurological and neuromuscular syndromes as well as most of the rarer forms. Anatomy and physiology are lucidly described and pathology correlated with clinical findings. Sections on treatment are up-to-date, with mention of newest drugs and therapy procedures.

There is a lack of detail and relatively few illustrations, but the style is simple and most readable. Each section is headlined, type and format are clear. This text should find wide acceptance in departments of physical medicine and rehabilitation.

Physical Rehabilitation or Daily Living. *By Edith Buchwald, M.A., ARPT, Director Rehabilitation Courses for Physical Therapists, Institute of Physical Medicine and Rehabilitation, New York University-Bellevue Medical Center. First Edition; hard cover. Price, $7.50; 183 pages; illus., 71 sets. McGraw-Hill Book Company, Inc., New York, 1952.*

Miss Buchwald is well qualified to write a manual of this type. She has been active in this work for many years both in the United States and Europe. The materials presented are based on the original work of one of the collaborators, George G. Deaver, M.D., and of Mary Eleanor Brown and Marjorie Sheldon, both physical therapists. This manual expands the original concept and presents modifications and other new materials not covered in previous publications.

The manual is written primarily for the physical therapist, the occupational therapist, and the nurse. The procedures described are directed to patients with involvements of the trunk and lower extremities. The descriptions which accompany the very excellent pictures are clear and simple and could be followed by the patient or members of his family.

A chapter on the importance of functional training opens the manual. Suggestions for an approach to the total program is given. The reader is instructed to break down an activity into its simplest components. From this he can determine the progression in the therapeutic exercise program which should be carried on in order for the patient to successfully, safely and logically learn the functional activity.

Five chapters follow dealing with bed and mat exercises, wheel chair exercises, self-care, ambulation, elevation and travel on crutches. Each section is composed of a detailed break down of each activity. In written outline the purpose, preparation, preliminary exercises, equipment needed, starting position, instructions and precautions are given. In some instances variations in procedure are given. Facing each description is a series of photographs of the activity actually being executed by a patient. These are well done and clear. In some instances it would have been of value if more stages in the progressions could have been shown.

The final chapter of the manual is devoted to sections on wheel chair specifications, a description of braces, testing for activities of daily living, equipment and furniture needed for a functional activity program. The section on wheel chairs will be most helpful to physicians, physical and occupational therapists, and nurses although it suffers because of brevity. It is well illustrated. The section dealing with braces is also brief. While this may have been intentional, it nevertheless includes several statements that might be misinterpreted if taken at face value. One is the suggested test for equal leg length while in braces. This states that in a swing through gait if the right foot lands in front of the left it is an indication of a short leg. This is misleading in view of other factors that could produce the same effect.

The general form, structure, and content of the book is excellent. It will be a valuable addition to any nursing library, physical therapy department, and occupational therapy department. Physicians in physical medicine will want a personal copy for reference and for planning departmental programs. Schools of nursing, physical therapy, and occupational therapy will find it a valuable addition to other materials of its type. It is the type of book which should be well worn from having been referred to often.

The greatest weakness appears to be in the introductory chapter in which the philosophy and methods of approach are outlined and too briefly discussed. The success of a functional program would appear to be in the joint planning by the medical personnel who care for the individual patient from early bed care to advanced ambulation, so that no phase or stage of the program is omitted. The idea of total planning receives some consideration but it is too brief for the actual value of this part of the program. All those who use the manual should give serious study to this first chapter before attempting to carry out the procedures so skillfully presented. The heart of the functional program is the overall plan, and not any one set of activities which a patient may learn to accomplish.

It is hoped that the patient with an upper extremity involvement will receive some consideration in future publications of this type.

Applied Anatomy for Nurses. *By E. J. Bocock, S.R.N., S.C.M., D.N., Principal tutor, Royal Free Hospital, Examiner to the General Nursing Council for England and Wales; and R. Wheeler Haines, M.B., D.Sc., F.L.S., Professor of Anatomy, Medical School, Abbassia, Cairo. Cloth. Price $3.50. Pp. 320. 231 illustrated sketches. Williams & Wilkins Company, Baltimore, Maryland, 1951.*

A picture of the function and structure of all body parts and systems that must be covered in a 12 lecture course or a 307 page book cannot be a fine etching of details. The picture of applied anatomy presented in this book, the substance of a lecture course given to nurses, is the rough sketch of a practical craftsman, colorful, interesting, useful to the audience intended. The authors have followed this model, "Every fact worth bothering about has an application in explaining either how the body works when it is well or how it breaks down when it is ill. . . ."

The plan of the book is regional rather than systematic, i.e., the shoulder and face area are considered together rather than all the bones, then all the muscles, etc. Because the details of the structure and function of the neuromuscular and skeletal systems are missing, and because much of the text is concerned with facts not applicable to physical therapy, this book is not recommended to physical therapists as a text or practical reference for their field.

Man and His Years. *Sponsored by the Federal Security Agency. First edition. Hard cover. Pp. 311. Health Publications Institute, Inc., Raleigh, North Carolina, 1951.*

This book is a factual account of the first national conference on aging that took place from August 13 to 15, 1951.

In June 1950, President Harry S Truman, realizing the significance of this problem, requested Oscar R. Ewing, Federal Security Administrator, to make a comprehensive study of aging.

After many months of preliminary planning and preparation, the conference was called. Eight hundred and sixteen authorities were invited to participate. They represented government, labor, industry, all colors and creeds, private and public old age institutions, universities and all scientific agencies. This group was a true cross section of American thought, both in training and in geographical distribution.

Preliminary remarks were expressed by Oscar R. Ewing, Federal Security Administrator, and John L. Thurston, Deputy Federal Security Administrator.

The discussion centered around the following subjects:

1. Population Changes and Economic Implications.
2. Income Maintenance.
3. Employment, Employability, and Rehabilitation.
4. Health Maintenance and Rehabilitation.
5. Education for an Aging Population.
6. Family Life, Living Arrangements and Housing.
7. Creative and Recreational Activities.
8. Religious Programs and Services.
9. Professional Personnel.
10. Aging Research.
11. Community Organization.

The highlights of the conference were aptly summed up by Clark Tibbitts, the Director. He stressed the fact that these discussions have served as an inspiration to promote further meetings and research on the vital subject of aging.

This book is a must for all thinking people. It emphasizes the fact that life expectancy is increasing. The 1950 census shows 12.4 million people in the United States, aged 65 and over, comprising 8% of our population. We must utilize all the manpower, brain power, and experience of these individuals.

The physical therapist will find special interest in the reports on health, rehabilitation, recreation, professional personnel, and research.

This conference is a vital step in the proper direction. We hope and trust that similar meetings will carry on this important project.

Management of Fractures, Dislocations and Sprains. *By John Albert Key, M.D., and H. Earle Conwell, M.D., F.A.C.S. Fifth Edition. Cloth binding; price, $16.00. Pp. 1232; illus., 1195. C. V. Mosby Co., St. Louis, 1951.*

This important and popular text book, written over fifteen years ago for medical students, general practitioners, and surgeons, has again been revised to inform the reader of present concepts and methods of management of fractures, dislocations and sprains, and related trauma evolved out of the dynamic experience of the several authors and that of many others from which the text has been freely drawn. The current edition follows the preceding one by five years and contains a number of new illustrations and appreciable material pertaining to newer methods of treatment or modifications of earlier methods. Much of the newer information has to do with compound (open) fractures and the use of medullary or marrow cavity fixation of fractures of the femur and tibia.

This work has enjoyed many reviews in the past and no doubt has grown therefrom in stature. The comprehensive character of the subject matter is great and the authors have strived in the past to keep the material current. It has been written for general use and its simple and frank style undoubtedly has had much to do with its success.

It can surely be expected to endure any present criticism equally well. At its inception in 1934 the authors wisely called upon others to contribute their specialized experience with injuries of the skull, brain, face, and jaw. This added materially to the comprehensiveness of the work, and the original context of the book has been altered to keep abreast of progress. However, no really new timber has been added, such as sections by others on the chest, abdomen, and hand, fields which have similar importance and have been developing comparably.

Also it would seem that basic knowledge pictorially described, relating to the principles of emergency amputation, repair of cut tendon, and nerve, and the appreciation and technic of certain skin plastic procedures in the extremities would be helpful to the medical student, general practitioner, and surgeon who may on occasion be dependent upon not more than one reference covering injuries. Specific information about the management of complex injuries would undoubtedly prove helpful to the reader who might be interested in some general principles regarding the timing and sequence of handling multiple injuries.

Attempts to make the text even more comprehensive than it is would impose problems. Precious space for this might be found by further consolidation of material in certain sections, by exclusion of detailed major orthopedic surgical technics of hip reconstructions, spine fusion, myelography, disc surgery, ligamentaplasty and by reduction in size of some of the photographs and elimination of a few of the more obsolete ones. This edition unfortunately again carries over many photographs besmirched by commercialism. Recognition might better have been given in the prefatory notes.

The past success of the book would seem to permit the use of some colored photographs to enhance the contents and aid in keeping it abreast of other similar works. Likewise, inclusion of pertinent and historical bibliography might contribute to the scope of this extensively used text on trauma.

Exercises After Childbirth. *By Gertrude Behn, M.C.P.S., former superintendent physiotherapist, Newcastle General Hospital. Paper cover; price, $.50. Pp. 32; illus., 36. (E. and S. Livingstone Ltd., Edinburgh.) Williams and Wilkins Co., Baltimore, 1951.*

A well written booklet giving a series of postpartum exercises designed to produce good posture and minimize low back ache that results from faulty posture following delivery.

Directions for exercises are simple and clear. Excellent photographic illustrations demonstrate exercises of value to the busy obstetrician and to the physical therapist interested in a postpartum exercise program. There may be too many exercises given for the new mother to carry out conscientiously, but a few selected ones could be used to good advantage.

Our Book Reviewers for May

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Margaret L. Moore, M.S., Chief Physical Therapist, University Hospital, University of North Carolina, Chapel Hill.

Max Weinstein, M.D., Kings County Hospital; Department of Rehabilitation and Physical Medicine, Jewish Sanitarium and Hospital for Chronic Diseases; Department of Physical Medicine and Rehabilitation, Brooklyn Hebrew Home and Hospital for the Aged.

Classified WANT-ADS

WANTED: Registered physical therapist at Cerebral Palsy Day School, Albuquerque, New Mexico. School Director qualified to teach cerebral palsy technic. Excellent climate, working and living conditions. Good salary. Write Mrs. Joe Heaston, Personnel Chairman, Hilton Hotel, Albuquerque, New Mexico.

PHYSICAL THERAPIST, qualified, female, needed June 1 for 150-bed general hospital. New, completely equipped department. Pleasant working conditions. Salary attractive. Please write details to Dr. Bertram M. Bernstein, Director, Dept. of Physical Medicine and Rehabilitation, William McKinley Hospital, Trenton, N. J.

The North Carolina Cerebral Palsy Hospital offers a limited number of positions to physical therapists. Appointment affords teaching affiliations with Duke University. Opportunities are available to learn as you work. Write to Director of Rehabilitation, The North Carolina Cerebral Palsy Hospital, Durham, N. C.

WANTED: Qualified physical therapist for day school, either full or part time. One interested in working with cerebral palsied children preferred. Salary open. Paid vacation. Write Mrs. Mildred C. Stover, Supervisor Brady Court School, 34 Brady Ct., Sharon, Pa.

PHYSICAL THERAPIST for active department in a 196-bed Children's Hospital, 40-hour week, salary open, liberal vacation, sick leave policies. Children's Hospital, Cincinnati, Ohio.

WANTED IMMEDIATELY: Qualified physical therapist with previous experience to work in physical therapy division of Public Health Unit. Must have a car. Good personnel policies. Contact: Robert L. Loftin, M.D., Director, Bay County Department of Health, Bay County Building, Bay City, Michigan.

WANTED: Qualified female therapist, at least one year's experience for follow-up work of polio cases and to establish a department in 115-bed general hospital; 44-hour week, two week vacation, sick leave, living accommodations available in nicely furnished nurses' home. Utah Valley Hospital, Provo, Utah.

WANTED: Qualified physical therapist by Franklin County Society for Crippled Children and Adults for treatment center. Good salary, paid vacations. Pleasant work in beautiful Cumberland Valley of southern Pennsylvania. Address inquiries to: Franklin County Society for Crippled Children and Adults, Waynesboro, Pa.

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